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6 March 1985

# USSR Report

AGRICULTURE

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## USSR REPORT AGRICULTURE

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## MAJOR CROP PROGRESS AND WEATHER REPORTING

### OVERVIEW OF AUTUMN FIELD OPERATIONS

Moscow TRUD in Russian 12 Oct 84 p 1

/Lead article: "Autumn Field Concerns"/

/Text/ October completes a series of tense months devoted to the harvest. During this period, the last windrows of grain are being threshed only on the fields of a number of rayons in Siberia. And in the south the amber corn grain is being shipped to the granaries, the sugar beets are being brought in from the plantations and the harvesting of late vegetables and potatoes is being carried out in all areas. A great amount of concern is being displayed for the autumn fields, everyone is in a hurry, inclement weather is hindering operations and regardless of how difficult conditions may be, time must be found for harvesting all of the crops grown and for laying the foundation for next year's harvest.

A special concern -- supplementing the feed supplies for the forthcoming livestock wintering campaign. Thus the Severnyy Sovkhoz in Vygonichskiy Rayon in Bryansk Oblast has already laid away more internally produced coarse and succulent feed than the amounts called for in the plan and it is presently procuring silage for other farms in the rayon and oblast. The farms in Tomsk Oblast have placed more feed in storage than was the case for the last wintering campaign; the plans call for 23 quintals of feed units to be made available for each animal here. In Belgorod Oblast, extensive use is being made of the method for preparing mixed silage from pulse crop fodder, fodder beets and other root crops, pumpkins, waste scraps obtained from corn and sunflowers, grass meal and other components. In addition to supplementing the ration, this method also makes it possible to expend grain forage in a more economical manner.

The peak period for work on the beet plantations is at hand. Two thirds of the areas have already been harvested. Over the past several years, a fine example has been set by the leading collectives in Yampolskiy Rayon in Vinnitsa Oblast. Mechanized teams at the kolkhozes imeni 40-Letiya Oktyabrya and imeni Kotovskiy, which employ the industrial technology, are obtaining 500-600 quintals of roots per hectare. Unfortunately, an undesirable pause has developed between the digging up and shipping of the crop in a number of rayons. Hundreds of thousands of tons of root crops have accumulated out on the fields in this same Vinnitsa Oblast, in some other oblasts of the Ukraine and also in the Bashkir ASSR. As is known, this can result in beet spoilage and in sugar losses in the beets even prior to their being made available for

processing. The leaders of farms, enterprises and transport organizations must undertake all of the measures required for ensuring efficient operation of the "field - sugar plant" production line.

It is a matter of honor for all workers attached to the agroindustrial complex to prevent losses and to properly safeguard all products grown. Unfortunately, the editorial board often receives reports concerning the spoilage of newly harvested fruit and vegetables owing to carelessness on the part of procurement organizations, errors in the organization of transport operations and a lack of preparation by the storage bases and processing enterprises. At the present time, during this final stage in the harvesting work, the new organs of administration -- the councils of agroindustrial associations -- must make maximum use of all available opportunities and resources in the interest of ensuring that reliable storehouses are made available for the crops. Indeed it is based primarily upon their activities that we are able to make a judgment concerning the quantities of products which finally reach the dining tables of the population.

The advancing winter requires a maximum mobilization of all forces. In this situation, a great deal depends upon the professional trade union committees and professional trade union aktiv. An effective socialist competition must be organized and directed towards ensuring that each good hour of working time out on the autumn fields is utilized to maximum advantage. A great amount of attention must be devoted to the correct use of moral and material incentives, both for the permanent farm workers and for those patrons drawn in from the side to prove the latter with assistance. Finally, priority concern is being displayed for creating fine domestic conditions, such that the personnel will be provided with shelter and will be able to keep warm and dry during inclement weather, be provided with hot food and be able to rest and regain strength when necessary.

More and more kolkhozes and sovkhoses are completing this important stage in the autumn work -- the sowing of winter crops. By 8 October, these crops had been planted on 35.9 million hectares. One feature of this present sowing campaign -- more extensive use of the highly intensive technology for cultivating grain crops. Experiments carried out on a number of farms in Stavropol Kray and in Lipetsk and Ivano-Frankovsk oblasts have shown that scientifically correct tending of grain crops serves to raise the return from the land and ensures effective utilization of fertilizers. And the greatest increase in grain is furnished by an intensive field that is cultivated by contractual collectives. Thus a progressive technology should be employed on the land and the work should be judiciously combined with the formation of contractual collectives.

And on the remaining fields, autumn is the most favorable period for concluding contractual agreements in the interest of avoiding the following situation: tracts sown by one group of people, following the spring period are cultivated and harvested during the summer by other groups of people. Farmers who have employed the contractual method for more than one year insist and with good basis that the foundation for the harvest is established with the first autumn furrow on an autumn plowed field. And if the field is entrusted to a brigade or team, all of the work will be carried out in a timely and conscientious manner. This fact must be borne in mind by the rural professional trade union committees when carrying out work with the organization and party committees in connection with improving organization and wages.

The latest news received from the autumn fields indicates that the agricultural workers are overcoming the difficulties occasioned by the period of inclement weather and persistently carrying out their work as they near the completion of the harvest season. The grain and pulse crops (excluding corn) have been harvested from 92 percent of the areas. Sixty six million tons of hay have been placed in storage, 66.3 million tons of haylage and 226.2 million tons of silage. The feed procurement specialists are devoting a maximum amount of effort towards ensuring that all of the fodder is brought in prior to the onset of the cold weather. The digging up of potatoes and the shipping of cabbage are nearing completion. The harvest operations out on the southern cotton plantations are in full swing. The work is being carried out on an immense scale. And the army of many millions of agricultural workers is fully resolved to celebrate their impending holiday with new successes in carrying out the Food Program. This will be their response to the appeal by the CPSU Central Committee in connection with the 67th anniversary of the Great October Socialist Revolution.

Workers of the agroindustrial complex! Accelerate the intensification of agricultural production! Furnish the country with reliable support in the form of food goods and agricultural raw materials.

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CSO: 1824/177



## MAJOR CROP PROGRESS AND WEATHER REPORTING

UDC 632.4/754.1:633.16

### MEASURES FOR OBTAINING HIGH QUALITY GRAIN SEED

Moscow ZASHCHITA RASTENIY in Russian No 10, Oct 84 p 43

/Article: "Sowing Qualities of Barley Seed"

/Text/ In 1980-1981, a considerable propagation of stink bugs was observed in Voroshilovgrad, Donetsk, Zaporozhye, Kharkov and Kherson oblasts in the Ukraine. Over the past 2 years, reports have been received from these oblasts concerning a sharp reduction in the germinative capacity of spring barley seed. In order to ascertain the causes of this phenomenon, we studied specimens of the seed (each specimen characterizes a batch of seed of from 100 to 250 quintals) obtained from rayons where centers having a high bug density were observed. As a result, a high degree of damage to the seed caused by the stink bug was established and also infestation of the seed by the "black embryo."

As a result of damage caused by grain bugs, the germinative capacity of barley seed on a number of farms decreased by an average of 6.6 percent in 1982, 5.3 percent in 1983 and even as high as 19-20 percent in some batches. Viability was lost in 50-60 percent and more of the damaged seed.

The "black embryo" was no less harmful in 1982-1983. The germinative capacity of seed, owing to the damage caused by this disease on farms which were inspected, declined by an average of 9.4 percent in 1982 and 8.9 percent in 1983 -- and in some batches by as much as 15-26 percent. Roughly 50-80 percent of the sick seed did not germinate.

A judgment can be made regarding the degree of harm caused by the stink bug and the "black embryo" by using the data obtained from an analysis of the 1982 seed crop obtained from a number of farms in Bliznokovskiy (Leninskiy Shlyakh and Zarya Kommunizma kolkhozes), Dvurechanskiy (Kommunist Kolkhoz) and Izyumskiy (Ukraina Kolkhoz) rayons in Kharkov Oblast. The specimens studied were drawn from local centers having a high number of grain bugs. Here the damage to the seed caused by the pentatomid ranged from 6 to 25 percent (an average of 10.7 percent) and the damage caused by the "black embryo" -- from 15 to 31 percent (an average of 22.5 percent). The seed of a large portion of the specimens turned out to be sub-standard in terms of germinative capacity. As a result of the damage caused by the stink bug, the germinative capacity decreased by 1-10 percent and owing to infection by the "black embryo" -- by 3-17 percent. True, an average of 4 percent of the seed in the specimens was

destroyed and in one half of the seed the embryos were damaged and this lowered the germinative capacity by 2 percent.

In accordance with the results of microscopic analyses, it was established that fungi of the Al'ternariya class and less frequently -- helminthospore -- are the causative agent of "black embryo" in the overwhelming majority of instances. The mycelium of the causative agent was detected in the tissue of the embryos and in the scale of the seed. Supposedly, the infection occurred during the blossoming phase to the commencement of milky ripeness in the barley. The sources of infection -- seed, stubble and sowings carried out following a stubble predecessor crop, which are infected by damaged seed.

In order to obtain barley seed having high sowing qualities, a complex of organizational-economic, agrotechnical and preventive measures must be carried out in a very strict manner: a sowing must not be carried out following a stubble predecessor crop; early treatment of the seed with ethylmercuric chloride seed fungicide (1.5-2 months prior to sowing at the rate of 1.5 kilograms per ton) and when the systemic disinfectants Vitavax or Vitatiuram are available, to use them for pre-sowing disinfection (suspension: 3 kilograms of the preparation per ton, 5-10 liters of water per ton, 0.3 kilograms of syrup per ton or 0.2 kilograms of silicate glue per ton), the timely harvesting of the crop and not allowing it to stand for too long a period in the field and when two-stage harvesting is employed -- the dragging out of the periods for the picking up and thrashing of the windrows; to rid the seed as rapidly as possible of green impurities, which tend to raise the moisture content (on damp seed, the causative agents of "black embryo" become active and release toxins which quickly destroy the embryos).

In the interest of lowering crop losses to the maximum possible degree and obtaining quality-standardized seed, a complex of measures must be carried out aimed at protecting the cereal grain crops against pests and particularly in the centers of mass propagation of these pests.

The timely carrying out of the recommended measures will make it possible to obtain cereal grain crop seed characterized by high sowing qualities.

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## MAJOR CROP PROGRESS AND WEATHER REPORTING

### IMPORTANCE OF AUTUMN SOWING OPERATIONS STRESSED

Moscow IZVESTIYA in Russian 10 Aug 84 p 1

/Lead article: "Autumn Fields"/

/Text/ One half of the grain crops has still not been harvested, many problems have developed out on the feed lands and in the meantime the farmers are beginning to sow their winter crops. Last week, the initial thousands of hectares were sown in these crops. Certainly, this is only a small amount when compared to the more than 40 million hectares which have been made available throughout the country for these crops.

Thus, more than 40 million hectares -- one third of all of our grain fields -- are located in zones considered to be mainly favorable for obtaining stable yields. There is an old proverb: "A winter sowing -- good grain" and it proves to be true more often than it is refuted. And given the present level of development for land reclamation, the use of chemical processes, mechanization and plant breeding, it is only under extreme conditions that the winter crop fields fail to provide a proper return for the work performed by the farmers.

The editorial board is presently receiving reports which indicate that good grain is being obtained on those farms which cultivate their winter crops in a creative manner and consistently employ the achievements of science and practical experience. Fine results have been realized in the large grain areas -- the Kuban and Stavropol Kray. In addition to fine yields, these areas have furnished strong and valuable wheat grain. Thus the farms in these areas are supplying grain containing high quantities of gluten and protein. Compared to past years, the farms in Rostov Oblast are selling considerably greater amounts of high quality wheat. This oblast has long been praised as a supplier of excellent grain and yet recently it has yielded some ground in this regard. Today the situation must be corrected. Many regions of the Ukraine have once again confirmed the strength of the Mironovo wheats and some other intensive winter crop varieties.

On one occasion the opinion began to take hold that winter crops can furnish grain having high baking qualities only in limited regions and then only at the expense of growth in their gross yields. But this opinion was convincingly refuted as a result of effort on the part of persistent and skilled production organizers, specialists, machine operators, procurement specialists and people's deputies. Winter crops furnish high yields and excellent grain in various zones of the country and over large areas.

Unfortunately, the present harvest operations underscore still another fact: in some areas, in the absence of sufficient persistence on the part of the RAPO's /rayon agroindustrial associations/ and the local soviets, farming innovations are being introduced into operations only on a formal basis and quite often they do not reach the specific individuals engaged in cultivating grain.

Hence, this explains those vexing miscalculations which are not all that difficult to avoid. Yes, farming is a lively and creative undertaking and one which will not tolerate routine practices. This also applies to a lack of organization. And the higher the work level, the more strict must be the technological discipline. But the technology is often simplified by the farm specialists themselves. And the statement is made to a greater degree on a winter crop field rather than in the case of spring sowings: it is not known what the weather situation will subsequently be like there and there is still time to correct the problems. Such a position is unacceptable.

Winter sowings have their own special features. If the harvest campaign moves from south to north, west or east, then the sowing operations will advance in the opposite direction. But at the same time, the regions so encompassed will not be smaller. On 10 August the optimum sowing period arrives for farms located to the north of the line Vologda - Smolensk - Vladimir - Yaroslavl - Gorkiy - Mariyskaya - Mordovian ASSR - Orenburg - Kurgan - Altay - Krasnoyarsk.

A tense situation has developed on those fields where a requirement exists for sowing machines. In the nonchernozem zone, for example, a number of operations are in full swing -- the harvest work, feed procurements, harvesting of early vegetables and threshing of perennial grass seed plants. There are also other concerns. But concern for the winter crop fields is ranked among the most important ones. The local soviets and the deputy groups in the various areas must mobilize the personnel and the technical resources in a manner such that the preparation of all of the winter crop areas will be completed within a matter of days and the crops will be sown following the best predecessor crop arrangements. Farms which are experiencing difficulties with their seed (although few in number, there are nevertheless such farms) must receive operational assistance from the agricultural and procurement organs.

The question regarding the need for increasing the production of winter crop grain through the intensive use of clean fallow and the introduction of progressive technologies was discussed recently during a meeting of the Politburo of the CPSU Central Committee. In the decree handed down concerning this question, it was stated that the experience accumulated in a number of regions serves to confirm the high results being achieved from this type of grain economy management.

This is not the first year that the intensive technology has been employed in Ivano-Frankovsk or Lipetsk oblasts. In Lipetsk Oblast, for example, experiments were carried out this year in 15 rayons. The autumn and spring dry spells precluded the possibility of the farms obtaining their programmed yields. But the specialists and RAPO leaders were confident that intensive sowings would compensate for any and all consequences of the unfavorable weather. This is why more than 430,000 hectares are being made available for the winter crops in

Lipetsk Oblast, in behalf of the harvest for the final year of the five-year plan. Roughly 130,000 hectares of the above figure -- the entire area of clean fallow -- will be cultivated using the intensive technology.

Seminars will be conducted in Lipetsk and Ivano-Frankovsk oblasts and later in Kiev and some other oblasts, the purpose of which will be to allow the specialists to acquaint themselves in detail with the experience accumulated in the intensive cultivation of winter crops. The decision has already been made to expand the area of use for the new technology this year.

It is not possible to cover the subtleties and features of this technology in just several words. But a very brief statement would reveal that the plants are provided with the best conditions, corrected in terms of the weather and other factors, during all stages in their development. Such sowings are supplied with the complete norm of balanced fertilizers and chemicals for protecting them against diseases and pests, using the ground method and exactly during the periods when they are needed.

This is difficult work. Thus importance is attached to ensuring that the personnel are thoroughly trained and display maximum interest in the final results. The methodological management of this work has been entrusted to VASKhNIL /All-Union Academy of Agricultural Sciences imeni V.I. Lenin/ and to its scientific institutes and the organizational activity -- to USSR Minsel'khoz /Ministry of Agriculture/, the RAPO's and the councils.

Overall success is very important since it will promote stable growth in grain production, make it possible to convert over to the effective programming of yields and, beyond any doubt, to reach the grain production level called for in the Food Program.

The winter crop fields are a field of activity for the councils. It is important for each production collective to support the desire to obtain high yields during the final year of the five-year plan, to vary the forms and methods for the socialist competition and to provide the contractual collectives with business-like support.

In gathering in this year's grain harvest, the country is also displaying concern for next year's crop. It can and must be considerable in volume, distinguished by high quality and provide a high return for the work performed by all those associated with its cultivation. And here an important role will be played by the winter crop fields. Given the present logistical potential, the farms are obligated to obtain good yields from these fields every year.

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## MAJOR CROP PROGRESS AND WEATHER REPORTING

### CONCERN FOR FUTURE HARVEST IN STAVROPOL KRAY DISPLAYED

Moscow IZVESTIYA in Russian 18 Sep 84 p 1

/Lead article: "Present Concern for the Future Harvest"/

/Text/ The beginning of the five-year plan turned out to be difficult for the grain growers in Georgiyevskiy Rayon in Stavropol Kray. Certainly, the failures could be blamed on the drought or other unfavorable conditions. But the personnel were first of all very demanding of themselves and they drew the conclusion that the weather only aggravated the miscalculations out on the grain fields, problems which the local soviets, farm leaders and agronomists had coped with for a considerable period of time. One particular conclusion was drawn: a need existed for a comprehensive and strict scientific approach for use in field crop husbandry. As a result, a grain production system proposed by scientists at the Stavropol NIISKh /Scientific Research Institute of Agriculture/ was mastered. Its implementation is being controlled by people's deputies and by RAPO /rayon agroindustrial association/ specialists.

And now the rayon's farms, some of the first in the kray to fulfill their grain sales plans, have supplied the state's granaries with 80,000 tons, of which amount 60,000 tons are strong and valuable wheat. Once again the farms here have planted their winter crops following good predecessor crop arrangements and they are observing all of the agrotechnical requirements in carrying out their winter sowing operations. The kolkhozes and sovkhozes in Georgiyevskiy Rayon have fine prospects for successfully completing the five-year plan.

How has this example been instructive? It has been instructive in the sense that it has convincingly underscored the need for associating daily farming practice with future interests, for taking note of the prospects for developing grain production and for employing scientifically sound technological and organizational solutions.

An attempt must be made to accomplish the above on all of our immense fields. This year again a number of rayons sustained damage caused by drought conditions. Nevertheless, we are still able to find, in any zone, tens and even hundreds of farms which obtained good harvests and which are successfully fulfilling their tasks for the five-year plan. Once again it is the grain harvest which is consistently raising the culture of the fields.



One of the most important trends with regard to the intensification of field crop husbandry -- increasing the productivity of the winter crop fields -- more than 40 million hectares. The question concerning the need for increasing grain production by improving the use of clean fallow and introducing progressive technologies was discussed during a meeting of the Politburo of the CPSU Central Committee. The high results achieved in carrying out this work in a number of rayons and the promising nature of the path being followed were noted. The kolkhozes, sovkhozes and local soviet and economic organs, with the support of scientific institutes and after having expanded the area of winter crops cultivated using an intensive technology, plan on obtaining no less than 10 million additional tons of wheat next year.

The winter crops have already been planted on more than one half of the areas using the new technology. According to data supplied by USSR Minsel'khoz /Ministry of Agriculture/, the agrotechnical requirements are being met and extensive use is being made of intensive varieties. The local soviets and the RAPO's must exercise very thorough control over the entire cycle of operations, in order to ensure that the new approach is not compromised by insufficient responsibility or an absence of skill on the part of those charged with carrying out the work. The appropriate ministries and departments are obligated to supply, on a special purpose basis and on schedule, all that is required for use of the progressive technology.

Moreover, on those fields where the crops will be grown using the traditional methods, special importance will be attached to mobilizing all reserves for ensuring a maximum return from them. There are many such reserves. For example, seed production can be better organized. The overwhelming majority of the country's kolkhozes and sovkhozes are capable of preparing 1st class seed for their winter and spring crops. All other conditions being equal, it is also known that this serves to ensure an increase in yield on the order of one fifth of the overall amount. Unfortunately, it must be confessed that the quality of the grain and pulse crop seed, for example in the Russian Federation, is improving only slowly. This year the republic's kolkhozes and sovkhozes sowed a considerable portion of their spring crop fields using seed which was lower than 2d class.

And at the present time, with only a short amount of time remaining before the end of the harvest period, the quantities of spring grain and pulse crop seed in a number of rayons are less than they were at this same time last year. Moreover, the farms in Siberia and the Far East have fallen short by 25 percent in satisfying their own requirements. The seed funds in Perm, Chelyabinsk, Volgograd, Voronezh and Kirov oblasts and also in the Udmurt ASSR are being augmented in a very slow manner. In other areas the seed supplies for great crops, sunflowers, flax and forage crops are low.

This indicates that in some areas the RAPO's and the councils have overlooked the problems concerned with developing seed production and have lowered their requirements with regard to the specialized farms, which often supply low quality seed and which are not fulfilling their direct obligations. And the above is occurring despite the fact that the necessary economic stimuli were in fact created.

Concern for the future harvest -- also includes the tending of fallow fields. These fields are being expanded and in some areas the optimum dimensions have

been reached. Aware of the value of clean fallow, a majority of the farms in Uralskiy Rayon, the central chernozem zone, western Siberia, Krasnoyarsk Kray and in Irkutsk, Kokchetav, Pavlodar and Tselinograd oblasts are carrying out fine work on them. However, in the absence of a proper foundation, improvements in the fallow land in Gorkiy, Orel and Chelyabinsk oblasts and in the Mordovian ASSR are being dragged out.

An important reserve for raising the productivity of our fields -- the timely preparation of autumn plowed land for spring sowing and the use of progressive soil cultivation methods. The time is at hand for viewing a large volume of spring plowing to be carried out on a particular farm as an extraordinary event. No reduction should take place in work directed towards protecting land against wind and water erosion. A reliable barrier against dust storms has been erected over a considerable amount of territory. But they are still occurring from the south and reaching up to the Donetsk mountain ridge. This underscores the failure to attach proper importance to the soil-protective system of farming.

Thus a chief feature in the complex of measures for ensuring a good future harvest is that of a vigilant attitude towards the land, its health and fertility, the crops that will be sown on it and towards its cultivation and fertilization. But thought must also be given to the organizational aspect of the work. Today there are many contractual collectives operating in field crop husbandry and feed production. The majority of them are performing good work and yet contractual weaknesses have appeared which take the form of failure to evaluate properly the independence of the cost accounting subunits and unfinished work by the economic services of farms and rayons. These shortcomings must be eliminated in an energetic manner. During the final year of the five-year plan, the cost accounting subunits must make full use of the available experience and technological solutions.

The day is not far off when all work associated with this year's harvest will be completed out on the fields. At the same time, autumn constantly reminds us of next year's harvest. Importance is attached to establishing a strong foundation for it and for celebrating the final year of the five-year plan with success out on the fields.

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6 March 1985

## MAJOR CROP PROGRESS AND WEATHER REPORTING

## REQUIREMENT FOR INCREASING GRAIN PRODUCTION EMPHASIZED

Moscow SEL'SKAYA ZHIZN' in Russian 11 Jan 85 p 1

Lead article: "The Country's Grain Fields"

Text Commencing with the first days of the new year, the farms and enterprises of the agroindustrial complex are working at a fine tempo as they strive to make a worthy contribution towards carrying out the decisions handed down during the October (1984) Plenum of the CPSU Central Committee and implementing the tasks outlined in the country's Food Program. The farmers are actively preparing for the spring sowing work, they are carrying out their winter agricultural measures and they are establishing a strong foundation for the future harvest.

A key problem -- achieving a steady increase in the production of grain. The rate of growth for such production must be such as to completely satisfy the country's grain requirements in future years. The economic and scientific-technical potential created in the rural areas and the experience that has been accumulated are making it possible to solve this urgent task in a successful manner. Last year, notwithstanding the complicated weather conditions, many leading farms and entire rayons achieved high yields and improved the quality of their grain. Nevertheless, the fluctuations in grain yields from year to year are still considerable. The majority of the kolkhozes and sovkhoses are only slowly achieving the yield levels called for by their logistical potential.

In summarizing the results for the year, the party committees, the leaders and specialists of farms and agroindustrial associations on the whole and all farmers must analyze thoroughly the reasons for the reductions in yields and draw the appropriate conclusions. One must ask himself the question: "Did the hectare of land fail to deliver or was I at fault?" Indeed, even under the identical conditions, the best collectives obtained two and three times more output than surrounding farms.

In the Don River region, the Gigant Sovkhoz obtained 34 quintals of grain per hectare. The plans for this year call for 38 quintals to be obtained here. High grain yields were obtained in Zernogradskiy, Tselinskiy, Yegorlykskiy and Kagalnitskiy rayons. At the same time, the grain yields for a large group of rayons and farms amounted to only 7-10 quintals per hectare. There can be no doubt but that the yields were affected by the weather conditions and yet this was not the chief cause of the reductions. Rather, the reduced yields came



about owing to violations of the production technology and a poor attitude on the part of the personnel towards the agricultural practices and the leading work methods. Soil work is being carried out on a weak basis in Rostov Oblast and only slowly are improvements being realized in the system for cultivating the soil, fertilizing the land and harvesting the crops. On the farms, mineral fertilizer is not being applied to the drill rows during sowing on all of the areas, organic fertilizer is not being applied to a portion of the fallow fields and obsolete varieties are only slowly being removed from production operations.

Great contrasts are also being observed on the grain fields in other zones of the country. For example, in Siberia, owing to the use of the scientific system of farming and a thrifty attitude being displayed towards each field by the contractual collectives, high and stable yields have been achieved on many farms and in many rayons on the whole. For example, the average grain crop yield over a period of 4 years at the Zavodoukovskoye OPKh /experimental model farm/ in Tyumen exceeded 41 quintals per hectare. At the same time, it was lower by a factor of 2-3 on a majority of the farms in Omsk, Kurgan and Novosibirsk oblasts. The leading grain producers in the Ukraine, Kazakhstan, Moldavia and the chernozem and nonchernozem zones of the RSFSR are familiar to the entire country. The party organizations and the RAPO leaders must thoroughly study and disseminate their experience and achieve growth in the production of grain at all of the kolkhozes and sovkhoses.

An object of special concern must be the winter crop sowings, which furnish more than one third of the country's gross grain yield. A great deal has been accomplished towards establishing a reliable foundation for these crops. The winter crops are planted following the best predecessor crop arrangements, the sowing is carried out using 1st and 2d class seed and fertilizer is applied to the drill rows over a considerable area. The task consists of protecting the seedlings from frost and from other unfavorable weather conditions, accumulating more snow out on the fields and applying spring and summer top dressings to the plants.

As is known, the Politburo of the CPSU Central Committee examined and approved the recommendations of VASKhNIL /All-Union Academy of Agricultural Sciences imeni V.I. Lenin/ and the agricultural organs with regard to increasing the production of winter and spring wheat, cultivated using the intensive technology. Some farms in the Kuban, Stavropol Kray, the Ukraine and the chernozem zone have accumulated experience in obtaining 50-60 quintal yields using the new method. Such sowings are being carried out this year on more than 6 million hectares. Each hectare must be monitored very closely by the farm leaders and agronomists and by the RAPO's /rayon agroindustrial associations/. Throughout the growing season, an entire complex of agro-technical operations must be carried out on this land during the best periods. Importance is also attached to making thorough preparations for sowing the spring wheat using the intensive technology.

In the complex of winter agricultural measures, a special place is occupied by the preparation of seed for sowing. For the strength and generosity of our fields are largely dependent upon the condition of the seed. Thus there is good reason for the seed being referred to as the gold fund of the harvest. Thrifty concern is being displayed for the seed in the Ukraine. Here every nine out of ten quintals are of high quality and in Dnepropetrovsk, Zaporozhye and Khmel'nitskiy oblasts the seed for spring grain crops is categorized as being 1st class of the sowing standard. The seed funds on farms in Belgorod, Lipetsk and Brest oblasts and in the Altay Kray are in fine condition.

Unfortunately, this cannot be said regarding the Perm, Udmurt, Novosibirsk and Irkutsk kolkhozes and sovkhozes, where almost one half of the seed does not meet the requirements of the standard with regard to weediness, germinative capacity and moisture content. In the Russian Federation, there is less 1st class seed than there was in 1983. In a number of areas, only small quantities of groat and pulse crop grain have been laid away for sowing and in Ryazan and Orel oblasts two thirds of the buckwheat seed is of sub-standard quality. All of these shortcomings must be eliminated. The seed must be processed and inter-farm seed exchanges carried out in a timely manner.

In the decisions handed down during the October (1984) Plenum of the CPSU Central Committee, special importance is attached to raising the effectiveness of use of irrigated and drained lands. The planned yields are still being achieved on only one third of the irrigated lands. The grain yields obtained under irrigation conditions are low on many farms in the southern Ukraine and Kazakhstan, the north Caucasus, the lower and central Volga regions and in Central Asia. In preparing to carry out the sowing work, emphasis must be placed upon expanding the sowings of grain crops under irrigation conditions and ensuring that they produce high yields.

Grain constitutes the very foundation for agricultural production. The more full the granaries, the higher the well-being of the people. Special concern must be displayed for the grain fields!

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CSO: 1824/177

## MAJOR CROP PROGRESS AND WEATHER REPORTING

### BRIEFS

SEED PROCESSING PLANTS--Kharkov, 17 Jan--A number of seed production plants throughout the oblast have accepted seed processing plants from the builders, the mission of which will be to raise all of the seed to 1st class condition and to store it until the sowing period. Towards this end, the required high productivity mechanisms have been installed and reliable storehouse facilities built. At the present time, such enterprises have already been prepared at semkhozes /seed farms/ in six rayons -- Shevchenkovskiy, Krasnogradskiy, Balakleyskiy, Bliznyukovskiy, Novovodolazhskiy and Velikoburlukskiy. Three more are being erected in Barvenkovskiy, Kharkovskiy and Bogodukhovskiy rayons. /by N. Demikhovskiy/ /Text/ /Moscow SEL'SKAYA ZHIZN' in Russian 18 Jan 85 p 1/ 7026

FIRST CLASS SEED--Khmelnitskiy, 27 Dec--This year the farmers of Podoliya sowed their winter wheat during the best periods and using only 1st class seed having a high germinative capacity. It has become a tradition in the oblast, in addition to the accelerated preparation of winter crop seed and following the harvest operations, to place in storage fully prepared seed for all of the spring crops. Special attention is being given on the farms to the quality of this seed. The laying in of barley, peas and oats was completed here back in September. The seed for other spring crops -- buckwheat, millet, vetch and lupine -- was prepared for sowing during the best periods. All 122,400 tons of seed for spring grain and pulse crops (with the insurance fund) was laid away and improved to 1st class condition. This will make it possible to supply the oblast's sowing areas with seed of the highest quality. /by V. Kazimir/ /Text/ /Moscow SEL'SKAYA ZHIZN' in Russian 28 Dec 85 p 1/ 7026

LITHUANIAN SEED PREPARATION--Vilnius, 18 Dec--The Lithuanian grain growers have resolved to improve all of their spring grain crop seed to a high condition prior to the end of the year. The farms in Pasvalskiy Rayon were the first to complete this work. Other farms throughout the republic are successfully carrying out the Urozhay-85 Program. Throughout the republic as a whole, where spring grain crops have been sown on more than 600,000 hectares for the final year of the five-year plan, 1st class seed was used for 80 percent of the sowings. /Text/ /Moscow SEL'SKAYA ZHIZN' in Russian 19 Dec 85 p 1/ 7026

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## LIVESTOCK FEED PROCUREMENT

### ELIMINATE UZBEK FEED CROPPING DEFICIENCIES, INCREASE YIELD

Tashkent SEL'SKOYE KHOZYAYSTVO UZBEKISTANA in Russian No 11, Nov 84 pp 38-39

/Article by G. Chichayev, chief of the Administration for Feed Production and Pastures of the UzSSR Ministry of Agriculture: "Methods for Intensification of Feed Production"/

/Text The republic's agricultural workers are devoting a great amount of attention to the materials of the April Plenum of the CC CPSU and the 10th Plenum of the Central Committee of the Communist Party of Uzbekistan. The party exhorts us to employ a thoughtful, creative and truly state approach in the development of agriculture. In this regard, it is difficult to exaggerate the role to be played by feed production in solving the priority tasks of the country's Food Program.

The republic's agricultural workers must accomplish a great deal in the interest of further developing feed production and raising the productivity of all irrigated and non-irrigated lands, such that the livestock requirements of each farm for high quality coarse, succulent and pasture feed will be satisfied completely.

The forage crops at kolkhozes and sovkhoses are assigned mainly to a system of cotton-alfalfa crop rotation plans, where they occupy not less than 25 percent of the areas, with 18 percent of this amount being sown in alfalfa. The efficient use of this land, in addition to satisfying the requirements of public livestock husbandry, will also meet the needs of the livestock being maintained on a private basis by the population.

Unfortunately, from year to year many farms are failing to carry out their crop rotation plans. The situation is especially bad in the Kara-Kalpak ASSR and in Khorezm and Kashka-Darya oblasts. The crop rotation plans in Kegeyliyskiy, Kasanskiy, Arnasayskiy, Ilichevskiy, Gurlenskiy and a number of other rayons are being mastered in an extremely unsatisfactory manner. As a result, a reduction has taken place in the areas being sown in forage crops and a sharp decline has been noted in the alfalfa, corn and root crop yields. Thus many farms are experiencing an acute need for feed during the winter; during this period the productivity of the cattle as a rule falls by 40-50 percent.

For example, let us take last year. At a majority of the kolkhozes and sovkhoses, the winter rations for the animals consisted mainly of coarse feeds.



And, understandably, the plan for sowing corn for silage and green feed in Kashka-Darya Oblast was fulfilled by only 9 percent, Samarkand -- by 36, Dzhizak -- by 51, Khorezm -- by 52, Namangan -- by 57 and in Andizhan Oblast -- by 61 percent.

As a rule, the fodder is placed in silo trenches with great violations of the norms for moisture content, tamping down and hermetic sealing. It is for this reason that 30-40 percent of the silage becomes unsuitable for use.

Many farms are now sowing cotton and vegetable crops on one third of their planned feed lands. During the course of an instrument measurement of the arable areas by Uzgirozem, the following was revealed: on farms in the Kara-Kalpak ASSR, the plan for the sowing of forage crop has fallen short by 52,800 hectares, in Kashka-Darya Oblast -- 21,000 hectares, Dzhizak Oblast -- 14,600 hectares, Surkhan-Darya Oblast -- 8,800 hectares and in Tashkent Oblast -- 8,700 hectares. In Andizhan Oblast, where the proportion of forage crops is the lowest -- 10 percent; in accordance with the plan, 4,200 hectares were not sown in 1983 and for the republic this figure amounted to 139,300 hectares.

The 16th Plenum of the Central Committee of the Communist Party of Uzbekistan sharply criticized a number of party and soviet organs for failing to exercise firm control over proper safeguarding of the land fund and over the squandering and concealment of irrigated arable land. Many farms are not displaying concern for increasing their numbers of livestock or developing the branch and they are orienting themselves not towards developing their own feed base but rather upon relying upon the availability of state mixed feed. Thus the proportion of feed being purchased, compared to the overall consumption of feed, is 60 percent and the forage being procured in the majority of cases is of the 1st and 2d grades.

In recent years, some oblasts have been drawn to sowing annual forage crops on irrigated lands. But what has been the result. Very unsatisfactory. And the reason? The agricultural practices are being violated in all areas. Yes and would it not be better to sow these areas in highly nutritious alfalfa rather than in Sudan grass or sorghum? As is known, alfalfa contains more carotene and protein than do annual forage crops. Despite being aware of this fact, some specialists, for one reason or another, are continuing to sow annual plants. Obviously, such a tactic provides inexhaustible opportunities for manipulating the feed lands as one chooses to. And here is the result. The alfalfa fields in the Kara-Kalpak ASSR declined by 22,300 hectares, in Kashka-Darya Oblast -- by 14,800 hectares, in Samarkand Oblast -- by 6,100 hectares and in Bukhara and Tashkent oblasts -- by 10,000 hectares.

Instead of eliminating the shortcomings noted, the leaders of the oblast agricultural administrations are continuing to encourage them. In 1984, 15,000 hectares of alfalfa "disappeared" from the feed lands in the Kara-Kalpak ASSR, in Kashka-Darya and Surkhan-Darya oblasts -- 2,000 hectares each and in Andizhan and Syr-Darya oblasts -- 1,000 hectares each. Where did they disappear to? This question should be addressed to the leaders of the agroindustrial associations and they should be required to carry out in a very strict manner the decisions handed down during the 16th Plenum of the Central Committee of the Communist Party of Uzbekistan.

Failure to carry out the plan for the sowing of forage crops leads to grave consequences with regard to livestock wintering operations: sharp decreases occur in milk yields and weight increases and infectious diseases occur more frequently.

In a number of oblasts, the agricultural practices employed in the cultivation of perennial grasses are being violated from year to year. Thus in 1983 the yield of bare alfalfa for hay in Dzhizak Oblast amounted to 18 quintals per hectare, Samarkand Oblast -- 22, Navoi and Syr-Darya oblasts -- 27-29 quintals per hectare. Can such indicators be tolerated? Absolutely not.

Low yields cause a considerable shortfall in feed per hectare. Last year, the republic's per hectare yield for all forage crops amounted to 4.2 tons of feed units and 461 kilograms of digestible protein. And what is the picture for the oblasts? Only 1.8 tons were obtained in Dzhizak Oblast, Kara-Kalpak ASSR -- 2.4 and Kashka-Darya Oblast -- 3.4 tons, whereas the task called for not less than 10 tons of feed units and 1,150 kilograms of digestible protein. Here then is the unused potential and reserves.

The contrasts noted above in the forage crop yields are the result of differing levels of management and, it follows, different returns from the material, labor and financial resources placed at the disposal of agriculture and its related branches. This is why the task assigned by the party for making more complete use of the available production potential is considered to be so urgent. The work must be organized in a manner such that each hectare of land, each ruble of investment, each kilogram of fertilizer, feed, fuel and other resources and each man-hour produces the greatest return.

In this regard, special importance is being attached to the quality of the feed being procured. Unfortunately, the leaders of many kolkhozes and sovkhoses are still devoting very little attention to this matter. As a result of failure to observe the agricultural practices required for the cultivation of corn and alfalfa, a considerable quantity of low quality feed is being placed in storehouses. Not all of the farms are carrying out their laboratory checks. The largest quantities of low quality hay are being procured on farms in the Kara-Kalpak ASSR (58 percent), Dzhizak Oblast (38 percent) and Andizhan Oblast (36 percent) and in the case of haylage -- in Bukhara and Namangan oblasts (30 percent), Syr-Darya (35 percent), Navoi (56 percent) and Surkhan-Darya oblasts (40 percent).

The losses in feed units and digestible protein, caused by a lowering of the grade of the hay and haylage and silage bulk procured, amounted to an average of 11 percent for the republic and this corresponded to a loss of 30,000 tons of meat.

A serious problem in feed production -- the organization of feed storage in standard good quality storehouses. The availability of concrete silage and haylage trenches in the Kara-Kalpak ASSR amounts to 21 percent, Navoi Oblast -- 28 percent and Samarkand and Surkhan-Darya oblasts -- 33 percent. This year the volume of work associated with the construction of such facilities is being increased. Over a period of 2 years, such facilities will be built for 1.1 million tons, root crop storehouses -- for 30,000 tons, grain forage facilities

-- for 115,000 tons and grass meal storehouses -- for 30,000 tons. In the absence of such facilities, there will be little likelihood of realizing a sharp reduction in feed and nutrient losses during storage. The work must be organized in a manner such that each leader of a farm or agricultural organ feels personally responsible for ensuring proper safeguarding of the feed.

The chief concern at the present time -- to achieve a feed production level per hectare of forage crop which will make it possible, this year, to reach the level already achieved by leading farms. And this must be accomplished with no expansion of the areas under crops, but rather merely by raising the yields. Many of the republic's kolkhozes and sovkhoses are obtaining six cuttings, or approximately 220-230 quintals of hay, from their alfalfa fields. They are obtaining fine corn fodder yields -- 650-700 quintals per hectare annually.

Unfortunately, there are still many farms which are harvesting for grain purposes corn which was sown for silage. Such practice is economically inadvisable. Computations have shown that a grain yield of 50 quintals per hectare provides 6,700 feed units and 4.3 quintals of digestible protein, whereas a silage bulk yield with ears of milky-wax ripeness of 500 quintals per hectare -- 10 tons of feed units and 6.5 quintals of digestible protein. Thus, from an area of 116,800 hectares of sowings intended for silage, it is possible to obtain additional feed throughout the republic on the order of 385,000 tons of feed units and 262.8 tons of digestible protein, which in a conversion for cattle meat (per kilogram of increase in live weight -- 12 feed units) amounts to 32,000 tons and for milk (per kilogram of milk -- 1.6 feed units) -- 240,000 tons.

A radical change must come about in the attitude towards soybeans. It is known that 1 kilogram of soybean grain contains 1.38 feed units and 250 grams of digestible protein. Thus the soybean sowings must be increased to a minimum of 10,000 hectares.

Soybeans can be grown in combined sowings with corn for silage, thus enriching it with protein. Tests have shown that soybean for grain should be sown on large areas, since this makes it easier to mechanize the harvesting of the crop.

In order to increase the feed yield from non-irrigated land, the 1744 variety of alfalfa should be replaced by the more productive Aridnaya variety. Sowings of the new forage crop sainfoin, which surpasses alfalfa in terms of yield and is in no way inferior to it in nutritional value, should be introduced into operations on a more extensive scale in the piedmont zone.

The experience accumulated by farms in Zaaminskiy Rayon in carrying out surface improvements to pastures should be made available for use on farms in the mountainous and piedmont regions of Uzbekistan.

Given the existing status of the feed base, we must not overlook one important reserve -- the waste products of the cotton ginning industry and the field waste scraps of cotton production (guza-paya and changalak). With appropriate preparation -- crushing with the aid of special machines -- ensiled with the fermentive preparation Trikhoderm Lignorum 19, the feed bulk can be included in the ration for animals undergoing fattening. Here the average daily increase in live weight for young bulls reaches 800-900 grams.



One very important method for achieving a savings in working time, while simultaneously increasing the production of goods -- the extensive dissemination of progressive forms for organizing and stimulating labor. In brigades and teams which operate on the basis of collective contracts, the creative activity of the personnel is higher and more efficient and effective use is made of the productive capital and manpower. With fewer expenditures of labor and resources, it is possible here to obtain 20-30 percent more products per unit of land area than in subunits which operate according to the old methods. The chief consideration at the present time -- to improve this form, to make it available for use in all areas and to raise the responsibility of specialists for organizing the work of contractual collectives.

More and more use is being made in feed production operations of the method of issuing wages based upon the final results. Despite the existing difficulties and shortcomings in the organization of logistical supply operations, cost accounting procedures are being employed in a more confident manner. Last year there were 3,380 brigades for the production and procurement of feed in operation at kolkhozes and sovkhozes. More than 60 percent of the sowing area for forage crops was assigned to subunits which operate on the basis of collective contracts.

The work must be organized in a manner such that each working day and hour is used for carrying out the measures outlined in the decisions handed down during the 16th Plenum of the Central Committee of the Communist Party of Uzbekistan. Work carried out in this manner will constitute a strong contribution towards the successful implementation of the USSR Food Program and the plans for the 11th Five-Year Plan.

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## LIVESTOCK

### ROUND TABLE COMPARES CATTLE PROCUREMENT METHODS

Moscow ZAKUPKI SEL'SKOKHOZYAYSTVENNYKH PRODUKTOV in Russian No 9, Sep 84 pp 30-34

[Report: "Which Method Is Better?: Problems of Improving the Organization of Agricultural Product Procurement"]

[Text] Components of the Food Program

The USSR Ministry of Procurement and the editors of the magazine ZAKUPKI SEL'SKOKHOZYAYSTVENNYKH PRODUKTOV have conducted a round-table discussion on the effectiveness of the two livestock procurement methods. We know that livestock has been procured in our nation by two methods for almost 2 decades: At the present time, 12 percent is accepted on the basis of live weight and 88 percent on the basis of meat weight and quality. Which of these methods is the most efficient? The one involving the greater quantity would appear to be. This is not entirely true, however. Experience with the procurement of livestock, numerous facts and the results of studies have shown that livestock procurement based on meat weight and quality has many substantial shortcomings. And it was with good reason that decisions coming out of the 26th CPSU Congress and the May 1982 Plenum of the CPSU Central Committee pointed out the need to procure livestock there where it is produced.

The USSR Ministry of Procurement and the editors of the magazine ZAKUPKI SEL'SKOKHOZYAYSTVENNYKH PRODUKTOV organized the round-table discussion because this question has become urgent and is in need of practical resolution. Because of this the magazine, which covers procurement work in our nation, must extensively demonstrate the positive and negative aspects of both methods and precisely depict the point of view of the USSR Ministry of Procurement, other ministries and scientific research institutions on this matter. Responsible workers from the ministries of procurement of the USSR, the RSFSR and the Lithuanian SSR, the ministries of agriculture of the USSR and the RSFSR, the ministries of the meat and dairy industry of the USSR and the RSFSR, the subsection for the agro-industrial complex under the USSR Gosplan and scientific establishments were invited to attend the discussion for this purpose.

USSR Deputy Minister of Procurement V.D. Kolobayev attended the discussion.

Before arriving at general conclusions, let us cite certain statements made by the participants in the discussion.

M.V. Kravtsov, acting chief of the State Inspectorate for Procurement of Animal Husbandry Products of the USSR Ministry of Procurement was the first to speak. In his talk he noted that an experiment and a study carried out by scientific establishments with the participation of workers from the USSR Ministry of Procurement and the USSR Ministry of Agriculture, as well as a study of a number of meat and dairy combines performed by agencies of the USSR Central Statistical Administration and a summarization of procurement experience, revealed a large number of substantial shortcomings in the system of accepting livestock on the basis of weight and quality. First of all, the coefficients established for converting carcass weight to live weight result in the exaggeration of report weight. The actual live weight of calves is inflated by 15 to 44 kilograms per head, for example. The same pattern of increasing the report weight over actual weight has also become established in the acceptance of hogs and sheep. This means that a fictitious, nonexistent weight is counted toward plan fulfillment, with all the resultant negative consequences.

Proceeds from the sale of livestock to the state on the basis of meat weight and quality are considerably greater than proceeds from the same quantity of livestock sold on the basis of live weight. This results in an artificial increase in livestock procurement prices, and more precisely, in the cheating of the state. In addition, the false weight raises livestock sales above the level achieved under the 10th Five-Year Plan, and consequently the 50-percent markup is paid for it. As a result, because of the coefficients, the farm which sells livestock on the basis of meat weight and quality almost always has padded weight counting toward its plan and receives extra earnings.

The system of report coefficients used for calculating fulfillment of the livestock procurement plan does not give the farms an incentive to fatten the livestock up to top condition, since increased coefficients have been established for converting the carcass weight of unfattened animals to live weight. This creates a situation in which a higher report weight is obtained and the procurement plan is fulfilled more rapidly by selling livestock of average or even below-average fatness.

In addition, the method of accepting livestock on the basis of meat weight reduces responsibility for its preservation, since the livestock is not weighed either on the farm or at the meat combine prior to slaughter.

In M.V. Kravtsov's opinion, the system of accepting livestock on the basis of weight and quality cannot be extended to cover all the livestock also for the reason that purebred livestock is procured only on the basis of live weight. Livestock is procured from the population on the same basis. Nor is the procurement of livestock on the basis of meat weight and quality being combined with the local acceptance of livestock as defined in decisions of the 26th CPSU Congress and the May 1982 Plenum of the CPSU Central Committee.

A comparative analysis of the systems used for paying for livestock, Candidate of Economic Sciences N.P. Kondrakov, docent at the Moscow Technological Institute of the Meat and Dairy Industry, said in his talk, does not permit us to conclude that the present system of paying on the basis of meat weight and quality is better than the system of payment for live weight. Furthermore, he used specific facts taken from the study to demonstrate many negative elements in that system. Among other things, he noted that the difference between the recorded

weight of the livestock from the true weight results in considerable overpayments for exceeding the annual average level of livestock sales to the state. According to his figures, annual overpayments for cattle amount to 700-800 million rubles for the nation as a whole, and to at least 1 billion rubles for all types of livestock.

The viewpoint of the aforementioned speakers was supported by P.D. Didenko, chief of the Procurement Administration for the USSR Ministry of Agriculture.

When livestock is sold and received on the basis of meat weight and quality, he commented, it is difficult for the agricultural specialists to verify the products sold. Responsible individuals are assigned from the kolkhozes and sovkhoses to take part in the selling and acceptance process, but there are not enough of these, and their qualifications leave something to be desired.

The carcasses are sometimes held too long before being weighed and refrigerated. The resulting weight losses are not taken into account and are borne by the kolkhozes and sovkhoses.

Animals in live weight are the end product of the livestock raisers. The figures for the end product are distorted when the carcass weight is converted to live weight on the basis of coefficients. Acceptance on the basis of live weight is quite another matter: Only with this system is it possible to release and accept livestock at the production site in the full sense of the term.

The talk by V.I. Blokhin, deputy chief of the Main Animal Husbandry Administration of the RSFSR Ministry of Agriculture, evoked great animation among the participants in the discussion. He provided well based criticism of the system of accepting livestock on the basis of weight and quality. At the present time, he noted, around 90 percent of all the livestock procured by the state and by meat combines in the republic is accepted and paid for on the basis of the weight and quality of the meat obtained after the animals are butchered. The experience of 15 years of working with this system, however, has demonstrated a large number of substantial shortcomings. V.I. Blokhin thoroughly analyzed the arguments advanced by proponents of the system of accepting livestock on the basis of meat weight and quality.

First of all, I would like to point out that meat industry workers have recently been introducing the so-called "centralized removal" of livestock, referring to it as the acceptance of products at the site. In fact, however, the "centralized removal" of livestock, whereby the animals are accepted at the site only with respect to the number of head and are paid for and registered in the procurement plan for the farms on the basis of meat yield, is nothing more than a matter of providing transportation. It is not the acceptance of products at the site. We also have to consider the fact that the "centralized removal" of livestock and poultry involves very small quantities. In 1983 it accounted for only 7 percent of total shipments of livestock and poultry for processing in the RSFSR.

Workers in the meat industry attempt to prove the impossibility of accepting livestock and poultry at the site by stating that the farms do not have the proper setup for this. In fact, however, they are simply evading the issue.



The republic presently has 440 large beef and pork production complexes and around 900 specialized poultry farms, which produce up to 2.5 million tons of meat per year. All of the conditions necessary for releasing and accepting products at the site have been created at these enterprises. They have surfaced access roads, weighing facilities in good repair, loading platforms, rooms for filling out the papers and transport equipment for hauling out the products. Livestock and poultry are still not being accepted at the site on these farms, however. Recently, the speaker went on to say, workers in the meat industry ministries, both Union and republic, have begun citing the absence of standard discounts for the stomach and intestinal tract as the reason why it is impossible to accept livestock and poultry at the site. I ask them, though: Who has forbidden them to work out such standards by the established procedure? Workers in the meat industry are very satisfied with the existing method of accepting livestock and poultry on the basis of the quantity of meat turned over to the refrigeration facility, with all the losses incurred en route, at the preslaughter bases and in the process of slaughtering the animals borne by the kolkhozes and sovkhozes. This is the main reason for the lack of progress with respect to developing direct relations and organizing the acceptance of livestock and poultry at the site.

The acceptance of livestock on the basis of meat weight and quality is supposed to reduce the amount of time the animals are kept at the meat combines without feed prior to slaughter. But what actually occurs? From 1968 (that is, when the conversion to this method was made) to 1980 inclusive, the standard amounts of time the livestock were kept without feed at the meat combines prior to slaughter were not reduced. They are exactly the same as when the livestock was accepted on the basis of live weight. And a reduction of this time would make it possible to increase the meat yield from each head of livestock. More than 50,000 tons of additional meat could be obtained in the republic as a whole. Only in rare instances, however, do the meat combines hold the livestock prior to slaughter within the established time limits, justifying this by the absence of hourly schedules for livestock deliveries. I ask who is keeping them from compiling such schedules, however. All the more, since the procurement functions, have been turned over to them in most of the oblasts, and they are responsible for making up such schedules.

Losses of meat were not reduced, but actually increased with the adoption of the new system of accepting livestock. This is due to the fact that under this system the meat industry enterprises determine the weight of the carcasses for purposes of payment and registering it for the farms when they are transferred from the slaughter shop to the refrigeration facility. Only then is the meat considered to be accepted and is the property of the meat combines. This has relieved them of responsibility for preserving the live weight of the livestock prior to slaughter and preserving the meat in the process of slaughtering the animals and processing the carcasses. As a result a number of meat combines have committed gross violations of the technological instructions for processing livestock. There are cases of excessive cutting and separation of meat and fat from the skins, the improper removal of heads, tails and limbs from the carcasses, the removal of loin muscles and diaphragms from cattle carcasses, jowls from hogs and teats from sheep prior to weighing the carcasses, and so forth.

At a number of meat combines hard objects instead of electric prods and switches are used for driving the livestock. This damages the integument and the muscle tissue. As a result, pieces of meat which could be utilized are cut off the carcasses at the bruised spots. The suppliers of the livestock bear these losses, which occur at the combines. Adoption of the system of releasing and accepting livestock on the basis of meat quantity and quality completely freed the meat combines of responsibility for preserving the meat, for the quality of the carcass processing, determination of their degree of fatness and consequently, the correctness of figures for the livestock.

The speaker went on to demonstrate the serious deficiencies encountered in the system of converting carcass meat into report weight for the livestock, which results in distortion of the real indicators for meat production and delivery weight, and to violations of the procedures for paying markups on the procurement prices for extra-fat calves sold to the state.

In his talk V.I. Blokhin cited the following fact. The Nekrasovskiy Hog Sovkhoz in Lipetsk Oblast fattens around 20,000 hogs a year. A sample check of initial documents has shown that the sovkhov's chief livestock specialist was taken away from the basic production operation for 40 days to accompany hogs to the meat combine and release them on the basis of meat yield and quality in 1983; the livestock specialist for the complex, 216 days; the brigade leader at the complex, 32 days; the veterinarian, 20 days; and the bookkeeper, 56 days.

V.I. Blokhin concluded his talk by saying that unfortunately no one considers the wages of those specialists when determining effectiveness. Most importantly, however, they do not consider production neglect or the weight gain lost as a result of their absence from their work stations. This no doubt costs the state a considerable sum and covers the amount of funds not received, about which proponents of the method of accepting livestock on the basis of meat weight and quality talk a great deal.

E.I. Lauzhikas, Chief of the Lithuanian SSR State Inspectorate for Animal Husbandry Procurement under the republic's Ministry of Procurement, noted in his talk that preparations for having the meat combines accept livestock on the farms were begun there as early as 1968. At the present time livestock is accepted on the basis of live weight where it is produced on 89 percent of the farms with plans for livestock sales to the state. It is planned to complete the conversion of all the republic's kolkhozes and sovkhovs to that system by the end of 1986. This procedure for procuring livestock is highly important with respect to building up the economies of the farms. First of all, it permits motor transport to be used more effectively. It has other significant advantages as well. Workers in the meat and dairy industry have understood this well. I was accompanied to the discussion by B. Shirvaytis, deputy director of the Kaunas Meat Combine, and V.I. Drulya, chief livestock specialist at the training farm of the Lithuanian Agricultural Academy. They can confirm this. All of us in the republic, including workers in the meat and dairy industry, unanimously believe that livestock should be accepted right on the farms on the basis of live weight. That is the opinion of all of us. Experience and life have convinced us all that this method is efficient.

M.P. Aleshichev, senior scientific associate in the branch Scientific Research Laboratory for Problems of Effectiveness in the Procurement of Agricultural Products of the All-Union Correspondence Food Industry Institute, also spoke against accepting livestock on the basis of meat weight and quality.

In his talk Ye.N. Anisimov, deputy chief of the State Inspectorate for Procurement of Animal Husbandry Products of the RSFSR Ministry of Procurement, discussed significant deficiencies in the method of procuring livestock on the basis of weight and quality.

For the reader's convenience we have cited first statements by all the participants in the discussion who spoke against the system of accepting livestock on the basis of weight and quality. Now let us turn the floor over to the proponents of this method.

I.I. Fedorus, chief of the Administration of Procurement of Raw Materials of the USSR Ministry of the Meat and Dairy Industry, began his talk by saying that at the present time many different kinds of livestock are procured in the nation. These include even such animals as reindeer, horses and others. In order to consider precisely the end product contained in the animals, the weight and quality of the meat needs to be determined after they have been slaughtered. Is it really fair for a processing enterprise to pay not for meat but for an intermediate product?

The accepting of animals on the basis of live weight creates disorder in the calculation and recording of the product. This was clear to the trained economists and practical workers even in the '30s, as a result of which the question of converting the release and acceptance of livestock and the accounts to dressed weight was raised. This method of acceptance is now the predominant one.

The accounting procedure for livestock based on meat weight and quality is especially successfully combined with its release and acceptance at the site of production, when the driver of the cattle truck accepts the animals on the basis of the number of head, and the final settlements with the supplier and the determination of quality are based on the results of their slaughter at the meat combine. The issuing of veterinary certificates poses no difficulty and the qualitative indices are determined far more efficiently. When the animals are accepted on the basis of live weight where they are produced, the procurer acquires "a pig in a poke" figuratively speaking, since it is far more difficult to determine the quality of the meat on the live animal than on its carcass.

The proponents of accepting animals on the basis of live weight frequently say that it is possible to substitute animals when they are accepted by number. We have not encountered this in our experience. As much as 90 percent of the livestock is hauled by motor transport, and there are ordinarily no losses during the several hours they are en route.

Another argument cited by the opponents of accepting animals on the basis of meat quantity and quality is that a large amount of excess products is counted toward the plan for the farms. I believe there is nothing unusual about this. The state pays for the meat, and the farm receives exactly the right amount for



the amount of meat, the end product, it has sold. The coefficients for converting the meat accepted to live weight are imperfect. One has to agree with this. Let us change them.

Economically, the system presently in use, whereby acceptance is based on meat weight and quality, is far more advantageous. At least 80,000 commodity experts and bookkeepers would be needed to make the final calculations at the site of production, after all. If we want our orientation to be toward the result, we should not take a step backward and return to the obsolete method. All of the advantages are with the acceptance of livestock on the basis of meat yield, and future efforts should be directed at improving it.

A.N. Vertiletskiy, chief of the Administration for Procurement of Raw Materials of the RSFSR Ministry of the Meat and Dairy Industry, also spoke out in favor of accepting livestock on the basis of weight and quality.

He noted in his talk that an experiment is being conducted in Lipetsk Oblast and Krasnodar Kray, the purpose of which is to compare the effectiveness of the two methods of accepting livestock. The final results have not yet been tallied, but the advantages of one or the other method can be judged from the opinion of the practical workers. Agricultural workers in Lipetsk Oblast, which was visited by specialists from the RSFSR Ministry of the Meat and Dairy Industry, are against accepting animals on the basis of live weight. They believe that with this method the kolkhozes and the sovkhozes are shorted significantly in payments for their output.

Opinions differ in Krasnodar Kray, although most people are in favor of acceptance on the basis of meat weight and quality. This is especially true of workers at the cattle fattening complexes, since the incentive for the intensive production of calves with a larger meat yield is lost when the animals are accepted on the basis of live weight. Proponents of the system of accepting animals on the basis of live weight, in turn, cite the greater simplicity of the release and acceptance process as its advantage.

Based on 17 years of experience in accepting livestock on the basis of meat weight and quality at the meat combine, F.N. Kachuk, chief of the raw material section of the Slonim Meat Combine in Grodno Oblast, reported in his talk, we can state unhesitatingly that this method has justified itself entirely, since it develops mutually advantageous economic relations between agriculture and the meat industry. In our opinion, live weight cannot serve as the criterion for objective evaluation of the quantity of the meat procured by the state, and it results in errors in settlements with the farms.

Yu.V. Tatulov, section head at the All-Union Scientific Research Institute of the Meat Industry, also supported the opinion of those advocating the acceptance of livestock on the basis of weight and quality. He also feels that live weight cannot be used as the criterion for determining the quantity and quality of the meat, the end product. Unfortunately, the meeting was not addressed by a representative of the All-Union Institute of Animal Husbandry, which is studying the question now under consideration. Both institutes have concluded that the system of releasing and accepting livestock on the basis of meat weight and

quality has advantages. The Institute of Animal Husbandry proposes that the system of weighing the animals at the meat combine be adopted to improve control over the acceptance process. We recommend converting to the planning of livestock production in carcass weight, which will make it possible to avoid misunderstandings in the conversion of meat, the end product, to accounting weight with coefficients.

From the editors: Let us bring some clarity to what Yu.V. Tatulov has said. He regrets that the meeting was not addressed by a representative of the All-Union Institute of Animal Husbandry. He had hoped that the latter would have confirmed the superiority of the system of procuring livestock on the basis of meat weight and quality. It would be difficult for us to guess what a representative of that scientific establishment would have said, but it would be useful to cite here a few excerpts from a report by Professor V.L. Vladimirov, acting director of the All-Union Institute of Animal Husbandry, and Candidate of Technical Sciences G.D. Konchakov, deputy director of the All-Union Scientific Research Institute of the Meat Industry. It was prepared after the completion of a comprehensive assessment of the effectiveness of accepting and receiving livestock on the kolkhozes and sovkhozes and at the meat combines on the basis of live weight and on the basis of meat weight and quality.

At the present time, the report states, the commission has performed the processing of a control group of 3,869 head of cattle, 2,578 hogs and 1,093 head of small horned livestock in various of the nation's raw material zones. An analysis of the findings shows the following.

#### For Cattle:

1. There was an average difference of 14 kilograms per head between the figures for calves accepted on the basis of live weight at the farm and at the meat combine, fluctuating between 6 and 30 kilograms for the individual lots. The corresponding figure for grown livestock was 17, fluctuating between 5 and 43 kilograms.
2. Differences in the fatness determined for calves accepted on the basis of live weight on the farms and the fatness of carcasses determined at the meat combine fluctuated between 0.44 and 13.3 percent on the average, with corresponding fluctuations of 2.2 to 48 percent for individual lots of grown cattle.
3. Differences in the distribution of heavy calves assigned to different weight groups based on live weight as established on the farm, compared with the weight of the carcasses after slaughter, averaged 8.9 percent, fluctuating between 0.6 and 31.7 percent for individual lots.
4. The calculated live weight obtained by using coefficients does not coincide with the live weight accepted on the farm or at the meat combine. The differences averaged +15 kilograms, with a range of -3 to +36 kilograms, for calves, compared with the calculated live weight of animals accepted on the farm, and a corresponding +3 kilograms, ranging from -36 to +35 kilograms for mature animals. Comparing the recorded live weight with the weight accepted at the meat combine, the differences averaged 29 kilograms per head, ranging between +9 and +44 kilograms, for calves, and 14 kilograms, with a range of +1 to +55 kilograms for individual lots, in the case of mature animals.

5. Average payment per head for calves in all the control lots was 788 rubles when based on live weight determined at the farm, which was 33 rubles less than was paid on the basis of meat weight and quality, and the corresponding figure for mature animals was 586 rubles, which was 22 rubles less than the payment based on meat weight and quality.

Payment per head of calves based on live weight at the meat combine was 736 rubles, which was 85 rubles less than payment based on meat quality and weight. The corresponding payment per head of mature animals was 537 rubles, which was 27 rubles less than payment based on meat weight and quality.

A similar pattern is found in the case of hogs and small horned livestock.

The authors of the report drew the following conclusions:

1. There are differences in the registered live weight, the assessment of livestock fatness and payment for the livestock when cattle are released and accepted on the basis of live weight on the farms themselves and when based on the quantity and quality of the meat.

The difference between the calculated live weight of livestock based on carcass weight and the actual weight accepted on the farm is +3.9 percent for calves and -0.7 percent for mature animals. As a result, the amount paid for livestock accepted on the basis of carcass weight and quality is 4.2 percent greater than payment for the actual live weight in the case of calves and 3.7 percent less for mature animals. Differences between the fatness of livestock as determined when it is accepted on the farms and the quality of the carcasses occur mainly in the case of livestock of less than average fatness and lean animals. The differences are insignificant--at the 3 percent level in the case of animals of average fatness, and there are practically no differences in the case of extra-fat animals.

2. Carcass weight and quality constitute an objective assessment of the livestock's meat productivity, but at the same time these indicators taken as the accounting basis for the economic function result in the exaggeration of meat production in live weight, compared with actual weight, and in the incorrect economic assessment of production on the farms.

3. The All-Union Scientific Institute of Animal Husbandry feels that the increased payments made to the farms on the basis of meat quantity and quality are not an indicator of effectiveness for the system of releasing and accepting livestock. At the same time, this system does not take into account all of the outlays or the preservation of the product involved in the release and acceptance process, and it essentially frees the meat processing industry of responsibility for preserving the product in the processing of the animals. Furthermore, we must take into account the fact that the end product of the farms' meat production operations are fattened livestock, and their live weight and all of the calculations (planning and actual) are determined from the results of the livestock raising process. At the same time, livestock make up the raw material of enterprises of the meat processing industry, and farms located in the meat combine's zone of operation make up its raw material zone.

Consequently, the live weight of animals is the main criterion for assessing a farm's meat production performance and should serve as the basis for settlements with the procurement organizations, while the release and acceptance process should be performed there where it is produced.

Conversion to the system of accepting livestock on the basis of live weight eliminates the need to use conversion coefficients and all of the discrepancies between actual and calculated weight.

The reader can see that the conclusions reached by the two scientific establishments, at one of which Yu.V. Tatulov works, are totally contrary to what he said in his talk at the round-table discussion.

K.I. Konovalova, state procurement inspector for Slonimskiy Rayon in Grodno Oblast, noted that the system of accepting animals on the basis of weight and quality makes it possible to determine the quantity and the consumption qualities of meat on the carcass more objectively. The procedure should be altered, however, so that the meat combine bears greater responsibility for preserving the product. Livestock received for processing from farms in Slonimskiy Rayon is of good quality. Up to 90 percent of it is extra-fat, and losses in the meat quantity and quality are therefore especially distressing for the farm workers.

Let us turn the floor over to two other participants in the round-table discussion--V.I. Manin, chief state inspector for the Central State Inspectorate for Quality of Agricultural Production and Raw Materials of the USSR Ministry of Procurement, and P.N. Rukosuyev, senior scientific associate at the Institute of Economics of the USSR Academy of Sciences. Unlike the other participants, they did not indicate a preference for one certain method of procuring livestock. This is what P.N. Rukosuyev said in his talk:

"If our orientation is toward the end result, then the system of releasing and accepting livestock on the basis of meat weight and quality is preferable, since live weight is not an objective indicator. At the same time, the experience of the Lithuanian SSR has shown that the system of releasing and accepting animals on the basis of live weight can also be successfully used. The ultimate determination of the procedure for selling the livestock should obviously be based on overall national economic effect."

"The speakers have said a great deal about the advantages and the shortcomings of both acceptance methods," V.I. Manin said in his talk. "I would just like to point out that violations of the technology for the primary processing are not isolated cases. They occur at many enterprises. These include the separation of lard from the carcass and the removal of jowls, internal lumbar muscles and the two tail vertebrae before weighing, prolonged suspended travel to the weighing point, and a number of other negative elements, which discredit the method of accepting livestock on the basis of meat weight and quality."

Complaints about "unsupervised" carcasses on the conveyor to the scales will disappear if the carcasses are weighed immediately after the insides are removed. This will provide the processing personnel with an incentive to be careful when cleaning the carcass and to preserve the meat, since the actual amount of meat trimmed off and veterinary rejects will be subtracted from the weight invoice in



the presence of representatives of the suppliers. The processing workers will have a direct incentive not to "conceal," but to weigh the meat trimmed off, to let the representative of the supplier see that the weight of the lot of processed livestock, minus trimming within the established limits, is being recorded for payment to the kolhozes or sovkhozes.

In addition, meat industry enterprises must be equipped with scales with an automatic registering device.

Since the process of converting to the acceptance of livestock according to live weight at the production sites and its removal by the procurer's transport means will be a long one due to the absence of roads and for certain other reasons, we must immediately perfect the technological process for processing livestock under the system of accepting it on the basis of meat weight and quality.

Additions to and changes in the technological instructions affecting the weight of the meat obtained must be coordinated with the USSR Ministry of Agriculture.

And so, the editors have given a brief presentation of the talks made by participants in the round-table discussion.

What did the discussion show us, and what conclusions can be drawn?

The magazine editors gave every participant in the discussion and the authors of articles received by the editors prior to and following the discussion an opportunity to explain their position in detail and to fully describe their arguments in favor of this or that method. We can see from the discussion and the articles that there is no uniform opinion as to which method should receive preference, which of them is better and more efficient. Each speaker and the author of each article attempted to demonstrate the strength of that method which he considers to be best, from both the practical and scientific standpoints. And this is understandable, since each livestock procurement method has its pluses and minuses.

It is obvious, however, as the reader himself has noted, that there is a polarization of workers in the ministries on this issue: Specialists with the ministries of procurement and agriculture advocate accepting livestock on the basis of live weight, while specialists in the ministries of the meat and dairy industry are for accepting livestock on the basis of meat weight and quality. In the interest of the common cause, it is therefore essential for the workers of the above-mentioned ministries to find a common language as rapidly as possible, to reach agreement and arrive at a common opinion, and to work out a common line in this matter. In the meantime, as long as both methods exist, we need to take immediate steps to eliminate the deficiencies of each of them. Perhaps we should make essential adjustments in the existing instructions immediately, set up strict control to see that all the existing statutes are properly applied, and work purposefully to see that there is strict observance of the procedure for preparing the livestock for slaughtering, the procedure for maintaining the livestock and the technical regulations governing the processing of carcasses at the meat combines.

The USSR Ministry of Procurement should make full use of its authority as a monitoring agency, suppress all attempts to deviate from the established regulations, take appropriate steps in cases of violations, and prevent the unilateral



revision of instructions, regulations and standards by departments. And there have been cases of this. Candidate of Economic Sciences A.I. Razumikhina, senior scientific associate at the Latvian Scientific Research Institute of Crop Cultivation and Economics of Agriculture, wrote in response to the article, "A Conveyor With Miracles," published in the newspaper Pravda on 15 February 1981:

"On 9 February 1977 Deputy USSR Minister of the Meat and Dairy Industry Yu.A. Krokha, unilaterally, without coordinating it with the USSR Ministry of Agriculture and the USSR Ministry of Procurement, and without coordinating it with the USSR Gosplan, established the new, nonspecific desultory Technological Instructions for Processing Livestock at Meat Industry Enterprises, and in Addendum No. 2 to those instructions he indicated that the Technological Instructions for Processing all Types of Livestock, recommended on 8 January 1960 by the USSR Gosplan for application at all meat combines, were no longer in effect.

"This was a violation of a basic law. Since settlements with the kolkhozes and sovkhoses are based on the weight and quality of the meat, and since its weight depends upon the proper technological processing of the carcasses by the meat combine, all instructions which are issued must be directed toward preserving and improving the quality of the meat and must be approved by the USSR Ministry of Agriculture and coordinated with the USSR Ministry of Procurement and the USSR Gosplan. This was not done, and the Instructions do not conform to the requirements. A very necessary point was removed from them, as an example: 'After the animals are stunned they are removed from the stall onto a level floor, which must be covered with a thick rubber mat to avoid damage (bruises and the trimming of the meat necessitated by this when the meat is dressed).'

"The point which states that 'skins with a considerable quantity of fat and meat attached are stripped (the fat and meat are separated by hand). The fat and meat removed from the skins in the livestock processing shop are weighed and used for the production of food' was also taken out.

"Nor did the Instructions include the point which states that the total area for the manual whitening of pig skins must be at least 35 percent of the entire surface, not counting areas for the legs, for fat carcasses (3rd category) and at least 30 percent for meat carcasses (2nd category). The section, 'Preparing Livestock for Slaughter,' which specifies the amount of time the animals can be held without feed but with water constantly available, which determines how well the skins can be removed, was eliminated.

"The Unified Regulations for Releasing and Accepting Livestock and for Livestock Accounting Based on the Weight and Quality of the Meat (coordinated) were issued on 28 October 1980. They listed the duties of the permanent representative of the farms at the meat combine, but did not indicate what responsibility the meat combine bears if the representative determines there has been a violation of the schedules set for processing the animals, the processing technology or the technology for maintaining the animals at the meat combine's preslaughter base-- failure to provide the animals with a constantly available supply of water, as a result of which the animals become dehydrated and the weight of the meat is reduced by up to 5-6 percent! What sanctions can the representative of the farm

apply? This is the essence of it all. There is no clarity, however, although the Regulations take up 19 pages! This is only the tip of the iceberg, however. The worst is yet to come.

"On 29 December 1980 Deputy Minister of the Meat and Dairy Industry Yu.A. Krokha established the Temporary Maximum Standards for Slivers (prirez') and Strips of Lard in the Removal of Skins and Crops From Hog Carcasses. This document permits all of the nation's combines to allow strippage of lard and slivers amounting to 2 percent of the weight of the fresh meat when removing the fresh skins from hogs in the 2nd, 3rd and 4th categories, and 1.1 percent when removing crops.

"Yu.A. Krokha forgot to add, however, that these slivers must be weighed and added to the weight of the fresh meat, and payment made for them to the kolkhozes and sovkhoses. When there are slivers of fat and meat on the skins they should immediately be delivered to the skin flaying table, where the fat and meat are cut off by hand to be used for the production of food. This 'forgetfulness' will reduce the pork procurement volume by around 2,000 tons for 1 year in the Latvian SSR alone, and payments to the kolkhozes and sovkhoses will be short by around 3 million rubles. But meat procurement in the Latvian SSR accounts for only 1.9 percent of the total procurement volume for the nation. What enormous damage this instruction has done to agriculture and to the fulfillment of the Food Program! Furthermore, this creates quantities of meat at the meat combines which is not recorded and for which the farms have not been paid, providing an opportunity for theft and abuses. It is therefore not surprising that the article 'A Conveyor With Miracles' was published. Such miracles will continue, unless the Temporary Maximum Standards for Slivers and Stripping of Lard During the Removal of Skins and Crops From Hog Carcasses, established by Yu.A. Krokha, are recinded."

The reader might wonder as a result of this why the workers in the State Inspectorate for the Procurement of Animal Husbandry Products Under the USSR Ministry of Procurement, knowing about those instructions, did not raise their voice against them. The USSR Ministry of Procurement sent off a letter requesting their rescission, but the leadership of the USSR Ministry of the Meat and Dairy Industry did not respond. The round-table discussion has demonstrated that there are diametrically opposed opinions on this matter even among the scientific workers, and some of them stray from the truth, defending entirely departmental interests and not revealing the negative consequences of a live-stock procurement method which has not justified itself in practice, do not trouble themselves to perform in-depth studies and do not provide precise and firm recommendations. This in turn provides certain ministry workers with 'grounds' for dragging out the debate, temporizing in the resolution of this matter and procrastinating with an important national economic issue. But time does not wait for us. It demands a radical solution and the adjustment of economic relations between agriculture and the processing industry as stems from decisions of the 26th CPSU Congress and the nation's Food Program.

The round-table information has been sent to the appropriate agencies.

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## LIVESTOCK

### BELORUSSIAN CATTLE BREEDING OPERATIONS EXAMINED

#### Herd Reproduction, Productivity Reviewed

Minsk SEL'SKAYA GAZETA in Russian 10 Jan 85 p 2

[Article by V. Sutkalenko: "The Vosproizvodstvo [Reproduction] Program: Scientific Base Needed for Breeding Work"]

/Text/ As is known, our republic specializes in the production of milk and meat. Livestock husbandry accounts for 56 percent and marketable output -- 80 percent -- of the overall gross agricultural output (in comparable prices). The republic's Food Program calls for per capita milk consumption to be raised to 378 kilograms and meat -- to 77 kilograms -- by 1990, that is, by more than 9 and 16 kilograms respectively than the figures for 1980. In order to achieve this level in 1985, it will be necessary to increase milk production at all categories of farms (compared to the average annual figure for the 10th Five-Year Plan) by 8.6 percent and in 1990 by 15 percent, and for meat -- by 18 and 40 percent respectively.

What factors can contribute to such growth? Answers to this question can be found in the Reproduction Program, which sets forth measures for improving the quality of the milking herd and raising the intensification of dairy cattle husbandry during the 1984-1990 period. It was prepared by the Ministry of Agriculture for the Belorussian SSR and approved by the Committee for Problems of the Agroindustrial Complex of the Presidium of the Belorussian Council of Ministers.

The planned volumes for obtaining milk and meat, it is emphasized in the program, can be achieved by raising the productivity of the animals based upon improvements in their feeding and reproduction of the herd and also as a result of further improvements in the branch management technology. Yes, this is precisely one of the weak areas, since the productivity of the livestock is still far from conforming to today's requirements.

The principal reason for this -- constant underfeeding of the cows and replacement young stock and, on this basis, disruptions in their reproductive functions. During the 10th Five-Year Plan, milk production in the public sector increased mainly as a result of an increase in the number of cows and not owing to an improvement in their productivity. During this period the number of cows increased by 12.6 percent and feed expenditures for the dairy herd increased by only 13.1 percent. At the same time, milk production during 1980 exceeded the 1975 level by only 4.1 percent, that is, the rates of growth for

gross milk production were lower by a factor of 3.5 than the rates of growth for the use of feed and for an increase in the number of animals. This means that the principal portion of the increase in feed expenditures was used not for raising the feeding level for the animals or increasing the yield of products, but rather for maintaining the vital functions of the growing number of animals. As a result, the productivity of the animals, as the principal condition for increasing the production of goods, did not increase but rather it even decreased.

This trend towards an increase in the number of animals and in milk and feed production continued during the 11th Five-Year Plan. The statistics reveal that the weight of a heifer at the time of insemination decreased from 332 kilograms in 1977 to 320 in 1980 and that their age during this stage of development increased to 24-27 months, compared to a norm of 16-18 months. Such breeding produces low weight cows.

An exclusive circle has developed in our livestock husbandry branch: the principal herd is formed out of heifers which have fallen behind in their development, animals which even in the presence of feed cannot consume it in sufficient quantities to ensure a high productivity. And despite the use of 1st class bulls, cows having low live weights produce young stock which subsequently will be incapable of having a high milk or meat productivity.

By analyzing the negative phenomena in livestock husbandry development, the Reproduction Program offers the principal recommendations, for use over the next few years, with regard to correcting operations throughout the republic in this leading branch of agricultural production. One of the key tasks: with unconditional fulfillment of the all-round program for feed production and growth in the number of cows, to improve considerably their qualitative structure. By 1990, to raise the proportion of pure-bred and 4th generation cows to 77 percent and to obtain from each one of them, on the average for the republic, not less than 3,000 kilograms of milk. The program interprets the components of this requirement.

What are they?

Each farm specializing in the raising of non-calving young cows must develop and approve a program for feed production which provides for complete support for the livestock in terms of all types of internally produced feed. This work must be carried out in conformity with the structure of the areas under crops. During this current year and also future years as well, specialized farms must be organized for the specialized raising of replacement heifers on farms which are not subordinate to associations engaged in the raising of non-calving young cows, with high weights being achieved in the animals.

The technological requirements associated with the feeding and maintenance of heifers and also measures for reducing barrenness in the dairy herd are set forth in detail in the program. Indeed, on many farms throughout the republic, owing to inferior and not properly balanced feeding of the cows, especially dry cows, violations of the artificial insemination technology (absence of the conditions required for calving) result in a situation wherein 20-22 percent of the cows annually fail to produce offspring. Thus, in 1982 only 79 calves were obtained per 100 cows and subsequently -- 81. Moreover, a portion of the



young stock is lost owing to cattle plague of forced slaughterings. This adversely affects an increase in the production of meat resources and it limits the opportunities for selecting heifers for reproduction purposes. The program provides a number of measures for improving considerably the status of affairs at the very foundation of the livestock husbandry branch -- raising heifers and maintaining cows and improving their productive qualities.

A special section of the program is dedicated to the technology for the feeding and maintenance of cows and to the organization of production and wages. The principal task is being advanced -- to ensure that in 1990 each cow will be allocated 37-38 quintals of feed units annually, with each unit containing not less than 105 grams of protein. Hay must occupy not less than 17 percent of the winter ration. By the end of the current five-year plan, all farms must have improved pastures close at hand, at the rate of not less than 0.4 hectares per cow.

The plans for production organization call for the following: in the construction of new and the modernization of old farms, their minimal dimensions must be such as to accommodate 200 cows (modernization), optimum -- for 400 and maximum -- for 600 cows. Complexes for 800 or more cows can be built only with the permission of the BeSSR Ministry of Agriculture. In each rayon, the base farms must be determined for the constant apprenticeship of operators, middle echelon personnel and kolkhoz and sovkhoz specialists, in matters concerned with observance of the technical and organizational-technological requirements for the operation of dairy equipment and the machine milking of cows. The certification of personnel for the title of "Master of Livestock Husbandry" 1st or 2d class is carried out annually during the first quarter. For the purpose of providing an extensive display of leading experience, it is recommended that agricultural exhibits be held annually in the rayons and periodically in the oblasts.

The program has 14 appendices in which tasks are assigned to the rayons and oblasts not only in connection with reproduction of the herd, but also for raising the productivity of the cows and for the training and retraining of workers in the artificial insemination of animals. Normative documents are also presented for wages and for the introduction of progressive technologies into operations on the farms. Moreover, the schedules for carrying out the work and the organs responsible for doing so are defined for each point of the program. Thus the program has acquired the force of law and at the present time, in addition to publicizing it, the leaders of the republic's agricultural organs, kolkhozes and sovkhozes and all production workers have been assigned the task of carrying out the program rapidly and completely. In this manner the livestock husbandry branch will be able to develop on a more intensive basis.

#### Improve Dairy Herd Quality

Minsk SEL'SKAYA GAZETA in Russian 5 Jan 85 p 2

[Article by I. Nikitchenko, professor and deputy director of Belorussian Scientific Research Institute of Livestock Husbandry: "Inputs for High Milking Yields: Scientific Base Needed for Breeding Work"]



/Text/ The socialist obligations of workers attached to the republic's agroindustrial complex call for an increase of 100 kilograms per cow in this year's milk yields. A further and noticeable increase is expected in the future. Here we are speaking of the need for raising the productivity to 3,000 kilograms by the end of the next five-year plan and achieving the level called for in the Food Program.

We have at our disposal all of the conditions required for solving this task. A reliable guarantee -- mainly the genetic potential that has been created for the productivity of the dairy herd.

However, the fulfillment of obligations requires that the livestock husbandry workers make full use of all available reserves. This winter, in order to achieve growth in milk and meat production, it will be necessary to utilize forage and other resources in an efficient manner in all areas. Greater attention is being given to the differentiated feeding of the animals, while taking into account their productivity and physiological condition. It bears mentioning that with each ton of milk obtained from a cow, an average of approximately 35 kilograms of milk fat and 32 kilograms of protein is withdrawn from the animal organism. The animals compensate for this quantity of nutrients only by transforming the protein, carbohydrates and fat contained in their feed. It is no secret that the animals differ markedly from one another in terms of productivity, even on the same farm. Thus the feeding of cows must be organized in a manner so as to preclude an over-consumption of forage by low productivity animals and an under-feeding of highly productive ones. The rations should be prepared based only upon the actual nutritional value of the forage.

Serious attention must be given to the correct distribution of forage in the interest of satisfying the feed requirements of non-calving young cows and dry cows. For it is precisely during this physiological period that the weight of a fetus increases by twofold and an energy reserve is created for the forthcoming lactation. Quite often, such animals, especially when there is a feed deficit, are the last to be supplied with feed and even then not to complete satisfaction. This can cause irreparable harm to their health, to their reproductive capability and to their productivity as a whole.

A considerable reserve for raising output -- improving all work being carried out in connection with reproduction of the herd and eliminating barrenness in the cows. A situation wherein one out of every six cows and approximately one out of every two heifers selected for reproduction purposes at kolkhozes and sovkhoses throughout the republic do not produce offspring can in no way be justified. Almost one half of the animals are being inseminated, with the optimum period being exceeded, prior to 90 days following calving. The duration of the inter-calving period is an average of 14 months instead of the 11-12 months called for. And indeed all of the specialists must be aware that the productivity of the animals is directly associated with their reproduction function. Given the present state of productivity in the republic, an extension of 1 month in the inter-calving period is equivalent to a loss of approximately 2 quintals of milk per cow. Each barren cow represents a loss in offspring and meat resources and an additional expenditure of feed, the overall value of which comes to more than 300 rubles per head annually.

For the most part, the existing situation with regard to reproduction is the result of violations of the artificial insemination technology, unsatisfactory veterinary services and a low level of organizational work on the farms. Certainly, these circumstances are not directly dependent upon the status of the feed base. On the whole, the farm leaders and the zooveterinary specialists of all levels and services are the guilty parties.

A thorough examination must be undertaken of the attitude that has developed towards the raising of replacement young stock -- a key problem with regard to the dairy herd. For various reasons, approximately 23 percent of the cows at kolkhozes and goskhozes are annually being withdrawn from operations. For their full-value replacement, no less than 30 well developed heifers must be raised for every 100 cows, of which number two thirds of the best must be added to the principal herd. Actually, only 22.9 heifers were raised last year for the indicated number of cows and thus each one had to be added to the herd. Moreover, their quality, as a result of unsatisfactory feeding conditions, was on the whole low. Even at spetskhozes /specialized farms/, where approximately 17 percent of the animals are raised, the heifers were inseminated at the age of 22-25 months instead of 16-17 months. Their weight amounted to only 317 kilograms, or 42 kilograms lower than the technological norm. Certainly, one can hardly expect to obtain good cows from such heifers. And the average weight of cows throughout the republic is only slightly more than 400 kilograms. And it is even less in Mogilev Oblast -- 380 kilograms.

The data furnished by scientific studies confirms the following: if a cow weighing 400 kilograms can furnish an average of 2.2 kilograms of milk daily per quintal of live weight with full-value feeding, then an animal weighing 500 kilograms can furnish one and a half times more. Such cows, under normal conditions and depending upon the strain, can furnish during a lactation period of 305 days 2,500-2,800 kilograms in the first case and more than 4,000 kilograms in the second case. Thus, considerable importance is being attached over the next 2 years to replacing under-developed cows at kolkhozes and sovkhozes throughout the republic with full-value first heifers; this will make it possible to achieve the productivity level of the milking herd.

The chief reason for low weight conditions in the cows -- insufficient attention being given to the problem of raising replacement animals on the part of the agricultural organs and farm leaders and specialists. For example, last year the capabilities of the spetskhozes were utilized to only 52 percent. It is our opinion that such farms are overloaded with plans calling for the production of other types of products. Full consideration is not being given to the specific nature of specialization. Thus the possibility of creating the necessary feed base is being ignored. For the most part, the animals are being supplied with only 56-78 percent of the feed required by them. Yes and on the remaining farms the replacement heifers usually are allocated considerably less forage than is made available to animals which have been fattened.

The oblast and rayon agricultural administrations must undertake all possible measures to ensure that the spetskhozes achieve their planned capabilities and they must also develop a structure for the areas under crops which will be in keeping with the profil of the specialized farms. Naturally, the plans must ensure that the animals are supplied with internally produced feed at the rate

of 20 quintals of feed units per average annual head, including 7 quintals of feed units of pasture feed. Intra-farm specialized farms for the raising of replacement young stock should be created at other kolkhozes and goskhozes and when distributing feed it should be placed on an equal footing with the milking herd.

And in connection with the specialized raising of replacement animals, equal importance is attached to achieving an average daily weight increase during all periods of 600 grams, such that offspring will be obtained from a heifer at the age of 26-27 months and the live weight of the heifer at calving will be 450 or more kilograms. Only in this manner will it be possible to realize the full potential of the animals.

In carrying out this work, use must be made of the operational experience accumulated at kolkhozes and sovkhoses in the Lithuanian SSR and in many rayons, particularly in Volkovysskiy, Nesvizhskiy, Gomelskiy and some others in our republic. Thus the average daily weight increase for heifers in Lithuania, during the entire period devoted to raising them, was 39 percent higher than the average for Belorussia. The heifers are inseminated upon reaching a live weight of not less than 359-360 kilograms. As a result, the weight of the cows and first heifers reaches 446 kilograms and the adult cows -- up to 500 kilograms. In addition to the fine raising of heifers on farms in Lithuania, the intensive breeding of the milking herd is also being carried out in a systematic manner. Each year the culling out of cows amounts to approximately 20 percent of the turnover in the herd.

Roughly 31-32 first heifers per 100 cows are being raised and evaluated as to their milk productivity for the purpose of replacing the above cows. Of the 31-32 first heifers, 20 of the best are added to the principal herd. In addition to fine feeding, this made it possible to raise the republic's average milk yield to 3,300 kilograms of milk per cow annually.

The work concerned with reproduction of the milking herd at the Smolevichi Experimental-Production Farm Budagovo of the Plemelita Scientific Production Association was organized in precisely this manner. On this farm, as a result of having raised the weight increases in the heifers during raising from 560 to 650 grams daily, the systematic raising of 28-30 first heifers per 100 cows and adding 70 percent of the best animals checked to the principal herd, success was achieved over a period of 5 years in raising the milk yield per cow during the first lactation by 36 percent and the average for the herd -- by more than 1,200 kilograms and raising the milk yield last year to 4,450 kilograms.

The Reproduction Program, approved by the Committee on Problems of the Agroindustrial Complex of the Presidium of the BeSSR Council of Ministers on 30 May 1984, has called for a complex of measures to be carried out for improving reproduction operations and the quality of the milking herd throughout the republic. It serves as a general guide for each rayon and oblast in the carrying out of reproduction work involving the milking herd.

An indispensable condition for achieving this -- a thorough inventory of the herd for the purpose of providing a zootechnically correct evaluation for all of the cows and heifers without exception that are planned for reproduction

work. Based upon such an inventory, the farm specialists must determine the best cow groups from which the replacement heifers can be obtained. An important component of the plans is a system of veterinary-sanitary measures for safeguarding the calves, a system for the feeding and maintenance of heifers and also an evaluation of the first heifer-cows as to productivity and breeding potential for adding to the principal herd.

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## LIVESTOCK

### APK COMMISSION CONFERENCE REVIEWS LIVESTOCK SECTOR PROBLEMS

Moscow SEL'SKAYA ZHIZN' in Russian 11 Dec 84 p 3

[TASS article: "Conference of the Agro-Industrial Commission"]

[Text] At the regular meeting of the Commission on Questions of the Agro-Industrial Complex [APK] of the USSR Presidium of the Council of Ministers held on 10 December, reports were heard by the chairmen of presidium commissions on the APK of the RSFSR and Kazakh SSR councils of ministers, L. B. Yerminev and T. B. Kuppayev and by the deputy chairman of the Presidium Commission on Questions Related to the APK of the Ukrainian SSR Council of Ministers, V. P. Popov, on the measures being implemented to carry out the overwintering of livestock in an organized manner and on achieving the fulfillment of plans to produce and procure agricultural products.

As the conference showed, despite the unfavorable weather conditions existing in a number of regions, agro-industrial associations have sought out possibilities for maximally accumulating all types of feeds and for transferring livestock to stall upkeep on schedule. In the oblasts, krais and autonomous republics of the RSFSR, the Ukrainian SSR and the Kazakh SSR measures have been taken to introduce additional feed shops and put feed kitchens into operation, to produce feed yeast and meat-bone meal and a substitute for whole milk, and to collect food wastes. All of this has enabled many enterprises to fulfill annual plans on the sale of livestock, poultry, milk and eggs to the state ahead of schedule.

At the same time, it was noted that in some kolkhozes and sovkhoses of these republics a drop in productivity of animals and an inefficient use of feed resources were tolerated.

Presidium commissions on questions of the APK of the RSFSR, Ukrainian SSR and Kazakh SSR councils of ministers were assigned additional measures to achieve the organized execution of overwintering of livestock. They are to pay special attention to preserving the herd and to effecting a growth in its productivity and to unconditionally fulfilling plans on the production and procurement of meat, milk and other products. It has been proposed to strengthen organizational work directly in labor collectives with regard to consolidating and further developing the positive results achieved in livestock raising.



Ministries and departments of the agro-industrial complex have been given the assignment of seeking out additional resources on increasing deliveries of chemical feed supplements, meat-bone and fish meal, microbiological synthetic products, disinfection and veterinary preparations, machines, equipment and other material resources to agriculture.

The activities of the council of the Gomel Oblast Agro-Industrial Association related to increasing the effectiveness of agricultural production were approved at the commission conference. In 1983-1984 the oblast successfully fulfilled plans on the production and sale to the state of grain, milk, meat, potatoes, vegetables, flax fiber and other products.

In its work the council of the oblast agro-industrial association relies on economic methods of production management. All sovkhozes and kolkhozes have introduced intra-enterprise accounts; progressive forms of organization and wage payments have been widely developed. A forestalling growth of labor productivity over the growth of wages has been achieved. Special attention is being given to strengthening the economies of low-profit kolkhozes and sovkhozes. In 1984 all enterprises will be profitable.

Presidium commissions of union republics' councils of ministers and councils of republic (ASSR), kray and oblast agro-industrial associations have been given the recommendation to analyze the work being done to increase the effectiveness of agricultural production in kolkhozes, sovkhozes and agro-industrial associations and to take the corresponding measures.

Guided by the decisions of the October 1984 Plenum of the CPSU Central Committee, the commission examines measures prepared by USSR Minvodkhoz [Ministry of Water Management] and USSR Minsel'khoz [Ministry of Agriculture] with the participation of the councils of ministers of union republics relating to increasing the effectiveness of using irrigated and drained lands in 1985. Specific growth volumes in grain, vegetable and feed production were established for these lands. Corresponding organs were given orders to strictly adhere to the established order concerning fully supplying kolkhozes and sovkhozes with mineral fertilizers, chemical reclamation agents and pesticides, technology and seed of high-quality varieties and hybrids for reclaimed lands.

The commission approved measures elaborated in accordance with the instructions of the USSR government relating to further organizational improvements and increased effectiveness of veterinary services to livestock raising, as well as a new draft proposal on USSR Goskomsel'khoztekhnika [State Committee of the Agricultural Equipment Association].

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## LIVESTOCK

### BASIC TASKS IN INCREASING MEAT, MILK PRODUCTION REVIEWED

Moscow PLANOVOYE KHOZYAYSTVO in Russian No 12, Dec 84 pp 102-108

/Article by V. Nefedov, deputy chief of administration for the RSFSR Central Statistical Administration: "Reserves for Intensification of Production of Meat and Dairy Products"/

/Text/ During the All-Union Economic Conference on Problems of the Agro-industrial Complex, the tasks contained in the USSR Food Program for increasing the production of food products and especially meat and milk, by means of production intensification, were validated.

Ideally, the meat and dairy sub-complex, which is a component part of the agro industrial complex, should be viewed as a totality of sub-branches: animal husbandry; feed production, including the mixed feed and micro biological industry; meat and dairy industry; specialized trade in meat and dairy products; machine building for animal husbandry, feed production and the meat and dairy industry.

The principal problems concerned with intensification of the meat and dairy sub-complex: raising the productivity of the animals, increasing the yield of finished food products per unit of meat and dairy raw material and preserving the biologically valuable substances in these products; raising labor productivity.

An improvement in productivity is conditioned by a number of factors and particularly by the quality of the animals and their genetic potential. V.I. Lenin noted: "In addition to the question concerned with the number of animals, no less importance and at times even greater importance is attached to the quality of the animals"\* . A great amount of attention is being devoted in our country to the biological factors of intensification, the importance of which has increased considerably in recent years. During the years of Soviet rule, as a result of planned selection and breeding operations, new strains of animals have been developed and improvements carried out in the quality of existing strains. At the present time, practically all of the animals are pedigreed. A substantial increase has taken place in the number of pure-bred animals. The improvements in the quality of the animals have promoted an increase in their productivity and in the production volumes for animal husbandry products.

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\* V.I. Lenin. Complete Works. Vol. 17, p 100.

Soviet scientists are continuing to solve the problems concerned with achieving further genetic improvements in the animals. One principal problem in breeding and selection work at the present time -- the creation of livestock strains in which high potential productivity is combined with adaptability to the conditions imposed by modern flow line-industrial equipment. In particular, the use of an industrial technology in dairy cattle husbandry imposes stern requirements with regard to such characteristics as the shape of the udder, speed of milk yield and so forth. Great importance is attached in this branch to the accelerated dissemination of a totality of characteristics which will be most suitable for an industrial technology and which are characterized by the exceptionally high genetic potential found in the holstein-friesian strain of cattle.

Modern science has developed effective systems for improving the animal strains, systems which make it possible, on a rapid basis, to carry out genetic improvements in a vast number of animals. The methods of artificial insemination have opened up great opportunities for accelerating the breeding processes, for creating highly productive strains of animals and for ensuring the efficient use of both domestic and international genetic potential. With minimal expenditures of material and financial resources, they are making it possible to improve the final results being obtained in the animal husbandry branch. However, insufficient use is being made of the favorable conditions created by science for achieving genetic improvements in the animals. In a number of oblasts, a substantial portion of the animals are not being included in the plans for artificial insemination and this is narrowing the possibility of accelerating the breeding processes and the use of the best domestic and international genetic resources for the purpose of obtaining highly productive livestock.

In order to improve the organization of breeding work, importance is being attached to expanding the network of breeding farms, to a proper distribution of them by zones and to the creation and consolidation of a breeding base in the regions of Siberia, the Far East, the republics of Central Asia, the Trans-Caucasus and Kazakhstan.

Despite the shortcomings noted in breeding and selection work, a large number of highly productive animals have been raised throughout the country. The problem of realizing the genetic potential of the animals, which quite often is used only to 50 percent, is considered to be acute at the present time. The cows of a majority of the strains are capable of furnishing milk yields of 3,000-3,500 kilograms annually and some cows -- 4,000-4,500 kilograms. The average daily increase in live cattle weight can reach 900-1,000 grams and hogs -- 550-650 grams. However, in recent years these figures were as follows: 2,100-2,300 kilograms, 350-400 and 250-300 grams.

Analysis has shown that the chief reason for weak use of the genetic potential of the animals -- shortcomings in their feeding. First of all, a requirement exists for raising the overall feeding level for the animals. On the average for the country as a whole, approximately 26-27 quintals of feed units are being consumed annually per standard head of cattle, while at the same time, on leading farms and in countries having highly developed animal husbandry operations -- 40-45 quintals of feed units. The rates of growth for feed

production are lower than those for growth in the number of livestock and this explains the shortage in feed and, it follows, the reduction in the productive portion of the feed.

The level of return from the use of feed is greatly dependent upon whether or not it is balanced in terms of the principal nutrients and particularly protein. One of the most urgent problems is that of feed protein. The livestock requirements for it are by no means being satisfied fully. The feed expended in recent years at kolkhozes and sovkhoses in the RSFSR contained an average of approximately 90-93 grams of digestible protein per feed unit, despite the fact that no less than 110 grams are required in order to ensure full-value feeding of the animals. The problem with regard to supplying protein-balanced feed throughout the indoor maintenance period is especially acute.

The principal condition for solving the feed protein problem -- expanding the pulse crop areas and raising their yields. The USSR Food Program has called for pulse crop production to be increased to 18-20 million tons in 1990 and for the gross yields of these crops to be increased considerably in the Volga region, the central chernozem and central regions of the RSFSR, the Ukrainian SSR, the Belorussian SSR and in the Kazakh SSR. In addition, the plans call for an expansion in the sowings of alfalfa, lupine, soybeans, rape and other high protein crops.

In addition to expanding the production of feed protein in field crop husbandry, a requirement will also exist for increasing the production of high protein feed additives in the branches of industry. The use of waste products obtained from industrial branches which process agricultural products -- oil, dairy, milling, sugar, alcohol, meat-fish and others -- is making it possible to alleviate the protein deficit problem. Amino acids, vitamins, macro and micro-elements, ferments, antibiotics and other physiologically active substances should be introduced into the rations in the interest of ensuring full-value feeding for the animals.

At the present time, an improvement in the feed supply for the more intensive branches -- poultry raising and swine husbandry -- where concentrated feed predominates in the rations, is associated mainly with raising the effectiveness of the grain economy and cattle husbandry and sheep raising -- with converting over to intensive methods for the production of coarse and succulent feed.

Great importance is attached to creating and strengthening the feed base at kolkhozes and sovkhoses. In addition to ensuring guaranteed supplies of feed, this is promoting a substantial reduction in the production costs for animal husbandry products, since internally produced feed is roughly one third cheaper than purchased feed.

Over the course of several five-year plans, the trend has been towards increased consumption of concentrated feed in cattle husbandry. However, this has not had a noticeable effect on intensification in the production of milk and beef, since just as in the past the cattle ration has not contained ample amounts of coarse, succulent or green feed and in addition the quality of this feed has often been low. On the average, during the years of the 10th Five-Year Plan and



compared to the 8th Five-Year Plan, the per cow consumption of concentrates at kolkhozes and sovkhoses in the RSFSR increased by 46 percent, succulent feed -- no change and coarse and pasture feed -- a reduction of 5 and 16 percent respectively. During the 10th Five-Year Plan and compared to the 8th Five-Year Plan, the average milk yield per cow at kolkhozes and sovkhoses in the RSFSR increased negligibly -- less than 1 percent, amounting to 2,250 kilograms.

The organization of a green conveyer line at the kolkhozes and sovkhoses is creating favorable conditions for the thrifty use of concentrated feed. The experience of leading farms has shown that the organization of the "green conveyer line," based upon scientifically sound control over the species and variety structure of the crops and their sowing schedules, is making it possible to supply the livestock with adequate amounts of succulent feed from spring right up until late autumn and to lower the consumption of concentrates by a factor of 1.5-2.

In addition, substantial improvements must be achieved in the use of natural feed lands. At the present time, many meadows and pastures are littered with small hillocks, bushes and swampy areas. Soil improvement work and basic improvements in haying and pasture land are being carried out very slowly in many oblasts. All of this is lowering the possibility of obtaining feed that is less labor-intensive.

Reclaimed lands play a special role in ensuring the guaranteed production of feed. The USSR Feed program has called for the production of feed on such lands to be raised to 80-82 million tons of feed units in 1990, for irrigated feed lands to be created in the vicinity of livestock complexes and for the production of perennial grasses, root crops, silage and other forage crops to be increased.

An important reserve for ensuring full-value feeding for livestock -- reducing feed losses and retaining their biological value through the extensive introduction of progressive technologies for the procurement, processing and storage of hay, haylage and silage. Use is presently being made of the following feed procurement technologies: procurement of pressed bales of hay or loose hay that was sun-dried in a field of plant raw material with a moisture content of 35-40 percent, with drying out in barns using the forced ventilation method; procurement of chopped haylage obtained from pressed hay in a field of plant raw material with a moisture content of 50-60 percent, with storage for conservation in concrete trenches; silage preparation using chemical preservatives so as to ensure maximum retention of the nutrients in the silage bulk. A high level of retention of the biological value of the feed is achieved through the artificial dehydration of the green bulk of the milled plants.

A necessary condition for retaining the quality in the feed procured -- improving the availability of feed storehouses for the farms. The construction and accelerated placing in operation of silage and haylage installations and storehouses for hay, root crops, grain forage, grass meal and briquetted and granulated feed mixtures must be expanded at the kolkhozes and sovkhoses.

A substantial increase is taking place in the return being realized from feed fed to livestock as a result of the feed being processed in advance. In



particular, on farms which were inspected in the Russian Federation and where more than 70 percent of the feed was processed before being fed to the animals, the average milk yields during the October - December period in 1983 were 24 percent higher than those on farms where less than 20 percent of the feed was processed.

Insufficient use is being made of progressive feed preparation methods at the kolkhozes and sovkhozes. During the first three months of the 1983/84 wintering campaign, on farms in the Russian Federation which underwent inspections, 44 percent of the concentrates used were subjected to yeasting and malting, approximately one half of the straw fed to the livestock was seasoned and steamed and roughly 10 percent of the overall expenditure of straw was chemically treated. Almost no hydro-barothermal or ferment-yeast processing of straw was being carried out on the farms inspected. On some farms the feed was being consumed with no processing whatsoever. In a number of instances, insufficient use was being made of the feed preparation equipment.

The low availability of feed for the livestock, the deficit of digestible protein in the feed and insufficient processing of the feed prior to feeding to the animals are precluding the possibility of raising the intensity of the livestock fattening operations and of achieving a substantial increase in their productivity.

An increase has recently been achieved in the weight condition of the animals mainly as a result of an extensive of the fattening periods. Whereas during the 9th Five-Year Plan the average duration of the fattening period for cattle in the RSFSR was 5.5 months, during the 10th Five-Year Plan -- 6 and during the 1981-1983 period -- 8 months.

In the Russian Federation, the highest average daily increase in live cattle weight during fattening is being obtained on farms in Leningrad and Moscow oblasts -- more than 700 grams, Gorkiy, Arkhangelsk, Belgorod, Vologda and Vladimir Oblasts, the Komi ASSR, Mari ASSR and Tatar ASSR -- more than 600 grams. At the same time, the increase in live cattle weight at kolkhozes and sovkhozes in the Checheno-Ingush ASSR, Kabardino-Balkar ASSR, North Osetian ASSR, Tuva ASSR and Astrakhan and Chita oblasts does not exceed 300 grams daily. With such productivity, no less than 1 year is required for fattening one head from 230 to 350 kilograms. An extension of the fattening schedules for cattle leads to an increase in feed expenditures in an absolute expression and per unit of product.

As animal husbandry undergoes further development and increased intensification, improvements will take place in the technologies for producing goods. In particular, one such progressive technology has been approved and is being introduced into operations in dairy cattle husbandry on many farms -- a flow line-departmental system for milk production and reproduction of the herd. The animals are maintained in various sections are transferred from one section to another (calving, milking and impregnation, milk production, interlactation period) in conformity with their physiological condition. Compared to the former system, this system of milk production, wherein the milkmaid carries out all production operations, possesses a number of advantages (division of labor,

operator specialization in various technological operations, the creation of more favorable conditions for strict observance of technological discipline).

The principal requirement with regard to the new technologies and scientific innovations in animal husbandry -- the normal completion of biological processes in the animal organisms. However, it sometimes happens that livestock maintenance technologies which have not been approved and which have not been adequately validated from a scientific point of view are placed in operation and this leads to adverse results. In particular, this occurred in the Mari ASSR, where in the absence of a thorough experiment a technology for the raising of Romanov sheep was introduced into operations on a large scale. This technology called for a high concentration of animals and year-round indoor maintenance for them in concrete facilities. This ran counter to the biological peculiarities of this type of sheep and in the final analysis it resulted in large losses.

The mechanization of labor-intensive processes is promoting improved labor productivity, an improvement in the working conditions of livestock breeders and an increase in the prestige and attractiveness of this work. The mechanization of such labor-intensive processes as the milking of cows, distribution of feed and the removal of manure from the facilities is being carried out successfully at many kolkhozes and sovkhoses. The highest level of mechanization of production processes has been achieved in poultry raising and swine husbandry. At the same time, substantial reserves are available for raising the level of all-round mechanization, since it is being used for servicing 45 percent of the cattle, 65 percent of the hogs and 75 percent of the poultry.

The conversion over to mainly intensive growth factors is associated with the use of such reserves as optimization of the structure of the agroindustrial complex and the elimination in it of those disproportions and bottlenecks which are restraining growth in the final results.

In the process of developing the final results of the agroindustrial complex and the meat and dairy sub-complex in particular, importance is attached to all stages of production. However, an especially great role is played by the final stages, since poor production organization during these stages and the absence of the required capabilities can serve to lower the results obtained during previous stages and bring about a considerable loss in labor expended earlier.

Considerable importance is being attached at the present time not to a further redistribution of resources in favor of agriculture and the agroindustrial complex on the whole, but rather to validating the priorities for development of the APK branches and agricultural sub-branches and to uncovering and eliminating those bottlenecks which are restraining growth in production efficiency and lowering the final results.

The problems concerned with eliminating the disproportions in the agroindustrial complex were analyzed thoroughly during the May (1982) Plenum of the CPSU Central Committee. It was noted that storage, the processing of products or the delivery of the products to consumers often become bottlenecks, rather than production proper. In particular, large losses are occurring which are

associated with the inability of the processing branches to keep pace with the procurement volumes for the cattle, poultry and milk.

In the interest of achieving a balance in the agroindustrial complex, the plans call for observance of the principle of priorities in the distribution of resources among the various spheres of the complex. The USSR Food Program and the food programs of union and autonomous republics, krais and oblasts call for the use of considerable capital investments for developing the production of meat and dairy products.

For solving the problems of balance in the agroindustrial complex and converting over to mainly intensive growth factors, great importance is attached to the measures carried out aimed at stimulating the work of rayon, oblast, kray and republic (ASSR) agroindustrial associations. The oblast and rayon agroindustrial associations are authorized to exert influence over the departments with regard to the use of a more efficient approach in the placement of processing branches, in organizing the construction of enterprises of the meat and dairy industry in the vicinity of farms, in selecting the optimum dimensions for these enterprises and in the opening up of branches by large active processing enterprises. Experience has been accumulated at a number of associations in the construction of processing enterprises based directly upon the use of centralized RAPO /rayon agroindustrial association/ funds.

Improvements in the preservation and more complete use of products are largely dependent upon the organization of product procurements. During the May (1982) Plenum of the CPSU Central Committee, the plans called for the completion during the 12th Five-Year Plan of the conversion over to accepting products, including livestock, poultry and milk, directly at the kolkhozes and sovkhoses, with the shipments to be carried out using the transport equipment of the procurement organizations. The conversion over to this progressive form for the delivery and acceptance of livestock and milk is still being held up by a shortage of transport equipment at the procurement organizations, by slow preparation of the kolkhozes and sovkhoses for turning over their products in the various areas, by the absence of approach roads and transfer platforms at a number of farms and by failure to supply the farms with equipment for the cooling of milk.

An important condition for improving the final results of the entire meat and dairy sub-complex -- an increase in the yield of food products per unit of raw material and more complete use of the biologically valuable substances contained in it, particularly protein and fat. The solutions for these problems are to a large degree associated with the use of progressive resource-conserving technologies in the meat and dairy industry, ensuring that the enterprises are supplied with the required technical equipment and achieving improvements in the production structure. The operational experience of these enterprises reveals that the use of dehydrated milk, buttermilk, whey, meat and bones increases considerably with the introduction of a low-waste or waste-free technology. At the same time, the technical level of a number of production operations in the branch is still not in keeping with the modern requirements and the low-waste and waste-free technologies are still not being employed on an extensive scale. The technologies being employed at a number of enterprises of



the meat and dairy industry preclude the possibility of carrying out the complete processing of the raw materials. As a result, losses are occurring during both processing and storage. In particular, up to 8 percent of the meat is being left on bones intended for technical purposes. Substantial losses are occurring in the nutritional components contained in the blood and bones of animals. Up to 20 percent of the bones alone are being degreased, despite the fact that there is a large requirement for nutritional bone fat, used in the preparation of margarine, culinary fats and whole milk substitutes.

The level of use of fat-free milk, buttermilk and whey for food purposes continues to remain low. At the present time, only approximately 60 percent of the milk protein being produced is being used in food, despite the fact that during the 1970's the trend throughout the country was towards an increase in the production of goods from fat-free milk. The population for the most part consumes milk butter. The most valuable part of the milk (protein, lactose, amino acids, vitamins and mineral substances) remains in fat-free milk and buttermilk, a considerable portion of which is not used for food purposes. Improvements are required in the structure of milk processing. Butter making in our country has been developed on a priority basis, while the cheese making and milk drying branches of industry remain insufficiently developed. In developed foreign countries, the trend is towards a reduction in the proportion of milk processing into butter and towards an increase in the processing of milk for cheese and dry milk products.

The use of milk for food purposes is being expanded through the use of whey in the food industry for the production of baking, confectionery and macaroni products. Moreover, in addition to the products being enriched with valuable milk proteins, a savings is also realized in the use of flour.

A large reserve for increasing the milk resources used for food purposes -- a reduction in the use of milk for feeding to livestock. At the present time, approximately 13 percent of the whole milk being produced is being fed to livestock, mainly to young stock. In addition, almost one half of the fat-free milk available is being returned to agriculture from the state resources and in many instances a considerable portion of the whey being supplied exceeds the scientifically sound requirements.

The use of starter mixed feed and ZTsM [whole milk substitutes], which are still not being produced in sufficient quantities despite a noticeable increase in their production in recent years, is making it possible to lower substantially the expenditure of milk for the raising of young livestock. At many kolkhozes and sovkhoses the ZTsM is fed to animals not as a substitute for whole milk but rather in addition to it. In a number of areas, an increase in the deliveries of ZTsM to the farms is accompanied by growth in the consumption of whole milk for feed purposes. Thus attention should be given to the recommendation\* concerning the need for legalizing the statute which holds that state deliveries of ZTsM should be viewed as temporary loans to the farms.

Substantial losses are being experienced in nutritional blood and endocrine-ferment, intestinal and other raw materials during the slaughtering of livestock directly at kolkhozes and sovkhoses and also among the population. According to estimated by scientists at the All-Union Scientific-Research Institute of the Meat Industry, the losses from each ton of cattle slaughtered directly on the farms amount to approximately 40 rubles. At the present time, approximately



one fourth of the animals being slaughtered are being slaughtered directly at kolkhozes, sovkhoses and among the population. This is associated primarily with the territorial remoteness of a number of farms from the processing centers, an insufficiently developed network of roads, a shortage at the kolkhozes and sovkhoses of specialized transport vehicles and refrigeration equipment required for transporting the livestock and meat, the absence under such conditions of local and low capacity packing houses and a lack of interest on the part of the farms and population in delivering the cattle for slaughtering to the appropriate enterprises.

An increase in the yield of final products per unit of meat and dairy raw material is a chief condition for lowering the branch's production costs, since the cost of the raw materials amounts to more than 90 percent in the production cost structure for marketable output by the meat and dairy industry.

A noticeable increase in labor productivity throughout the branch is making it possible first of all to raise the technical level of production. In particular, the introduction into operations in recent years, at a number of enterprises of the meat and dairy industry, of sets of equipment with automatic means for the salting of meat and the preparation of sausage meat, lines for the production and packaging of semi-finished meat products, lines for the production of skinless sausages, mechanized baths for the production of cheeses, mechanized flow lines for the production of butter, automatic lines for the bottling of pasteurized milk, automatic cheese producers with programmed control and other devices and units have made it possible to lower live labor expenditures substantially at these enterprises.

The creation of highly productive cattle strains, ensuring that they are supplied with the feed required and the strengthening of the logistical base for animal husbandry and other sub-branches of the meat and dairy sub-complex -- all of these biological and logistical factors only describe the potential of intensification. Their actual utilization is largely dependent upon the organization of production control in the sub-complex, an improvement in the economic mechanism, upon the creation of economic conditions which will promote increased interest on the part of all elements of the sub-complex in achieving more efficient use of the production potential, upon lowering expenditures and achieving high final results and upon more extensive use of material and moral incentives.

The work of the new organs of administration -- oblast, kray, republic (ASSR) and rayon agroindustrial associations -- is promoting an improvement in coordinating the work of ministries and departments, their organs in the various areas and subordinate enterprises and organizations, in mobilizing efforts aimed at achieving more complete use of resources, increasing the production, procurement and processing volumes and raising the quality of the products and also production efficiency.

Departmental isolation has decreased somewhat with the appearance of the agroindustrial associations. However, it still has not been eliminated entirely, since the enterprises and organizations included in the structure of associations retain their departmental affiliation. Thus importance is attached to ensuring well organized and continuous operation of the economic mechanism

and the creation of economic levers which will raise the responsibility and interest of all elements of the agroindustrial complex in improving not the departmental but rather the final results.

In conformity with the decree of the CPSU Central Committee and the USSR Council of Ministers entitled "On Improving the Economic Relationships of Agriculture With Other Branches of the National Economy," measures are being carried out aimed at increasing the responsibility of those enterprises and organizations providing services for the kolkhozes and sovkhoses, with regard to increasing the production and procurements of agricultural products, improving the quality and schedules for carrying out work and providing services, raising their interest in achieving high final results and increasing the efficiency of agricultural production.

At the present time, a new accounting system is being introduced in a number of areas between kolkhozes and sovkhoses with the rayon associations of Sel'khoztekhnika for technical services and the current repair of animal husbandry equipment. The essence of this system is as follows: the specialized services of Sel'khoztekhnika ensure the continuous operation of all machines and mechanisms on the farms and in the feed preparation shops and the farms pay for these services based upon the normative cost for the repair work or technical service and not upon the actual volume of work carried out. This is promoting greater reliability in the operation of animal husbandry equipment and it is eliminating the interest of rayon associations of Sel'khoztekhnika in carrying out unplanned work. The Sel'khoztekhnika workers on a number of farms receive additional payments for having increased the production volumes and having improved the quality of the animal husbandry products.

Great importance is being attached to further activating all economic work aimed at motivating each worker at an enterprise -- from a leader down to a worker or kolkhoz member -- into achieving greater economies and thrift, increasing the return from the production potential created, ensuring the efficient use of material, financial and labor resources, introducing scientific achievements into production operations as rapidly as possible, lowering production costs and achieving more complete utilization of the intensive growth factors. An important condition for enlivening economic work -- raising the role played by economists as organizers of great and laborious endeavors concerned with the intelligent and zealous use of the vast resources placed at the disposal of enterprises and increasing the return from them. The economists play a great role in furthering technical progress. In this regard, V.I. Lenin noted that "An economist must always look into the future in behalf of engineering progress. If he fails to do this he will immediately fall behind"\*.

The solutions for such problems as the thrifty use of material, labor and financial resources, reducing losses and strengthening state, labor and technological discipline require further improvements in the organization of accounting procedures. Inspections have shown that the accounting carried out at enterprises of the agroindustrial complex is not always in keeping with the modern requirements. At a number of enterprises, insufficient attention is

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\* V.I. Lenin. Complete Works, Vol. 5, pp 137-138.

being given to the receipts or to the movement and expenditure of material resources, only weak control is being exercised over the consumption of materials and raw materials and incidents of eyewash are being encountered. The enterprises of the agroindustrial complex and the statistical organs are presently confronted by large tasks concerned with improving accounting procedures, increasing the role it plays in exercising control over the correct use of resources, combating mismanagement and waste, the expenditure of state and public resources for purposes other than those originally intended and ensuring the conditions required for more complete use of the intensive growth factors.

Production intensification and improvements in the final results are being promoted to a considerable degree by the introduction of progressive forms for labor organization and wages. At the present time, the kolkhozes, sovkhozes and other enterprises of the agroindustrial complex are making greater use of the collective contract. As a rule, in those subunits which operate on the basis of collective contracts labor productivity increases at higher rates, losses in working time are reduced, savings are realized in the consumption of material and labor resources, discipline is strengthened and a spirit of genuine collectivism, mutual exactingness and comradely mutual assistance prevails. However, formalism is tolerated in many instances in this important work, a lack of personal responsibility is noted in connection with the use of material resources, cost accounting principles are violated and so forth.

In the case of animal husbandry subunits, experience has shown that the collective contract is introduced most successively in those areas where there is a well organized livestock maintenance technology, a strong feed base and highly skilled personnel and in feed procurement subunits which are adequately supplied with highly productive equipment and an appropriate system of machines.

An all-round solution for the problems concerned with the further development of animal husbandry and its related branches will make it possible to increase production substantially with fewer expenditures and to supply the consumer with meat, milk and the products obtained from their processing and at the same time it will promote the fulfillment of the Food Program.

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## LIVESTOCK

### SPECIALIZED PROGRAM FOR DAIRY CATTLE BREEDING DISCUSSED

#### Application of System Reviewed

Tashkent EKONOMIKA I ZHIZN' in Russian No 9, Sep 84 pp 62-64

[Article by G. Kornil'tseva, senior scientific worker of the agricultural division of UzNIINTI [Uzbek Scientific Research Institute of [Further expansion unknown]], candidate of biological sciences: "'SELEKS'--Specialized Breeding Program in Dairy Cattle Breeding"]

[Text] The concentration of dairy cattle breeding, an increase in specialization and the introduction of industrial methods--these are the main directions for intensifying the branch. Among the factors that facilitate increased productivity, in addition to full-value feeding and optimal conditions for maintaining and raising agricultural animals, we find breeding work.

Industrial technology requires new approaches to the methods of breeding work directed at developing highly productive and healthy animals suitable for use on highly mechanized farms.

In recent years a number of union republics have successfully utilized the more modern breeding methods of a specialized program, SELEKS (breeding, economics, system). The introduction of this method enables us to increase milk yield in cows in the enterprises of the Estonian SSR to 3.473 kilograms, of the Lithuanian SSR--to 2.911 kilograms and in Leningrad Oblast--to 3.024 kilograms. The SELEKS system encompasses production processes related to the reproduction of the herd, the use of productive qualities of animals, the continued improvement of subsequent generations of animals and the preservation of their health.

Effective breeding work under contemporary conditions can be carried out only on the basis of a systematic approach that represents a synthesis of biological and economic sciences, techniques, equipment and organization.

The SELEKS system, by analyzing and integrating information on breeding, artificial insemination and veterinary science with the aid of modern computer technology, provides the opportunity to organize the production of animal products on a qualitatively new level and to use scientifically-based methods with a programming direction and with long-term and short-term planning of



breeding and production processing. SELEKS represents a complex of measures to integrate breeding, artificial insemination and the effective use of animals; it provides the necessary information to make decisions related to managing the farm, the enterprise, the livestock region, the republic, and in the future--the entire country.

The system accumulates detailed information about all changes in breeding utilization of animals. It serves as a source of input data for other information systems. In the final analysis, SELEKS will strive to become one fragment of the country-wide automated system when possible.

At the present time, the operational load complex of SELEKS includes complete processing of data on dairy cattle breeding. It runs a number of problems related to breeding, veterinary science, management of technological processes, forecasting and planning. This elaboration can already now be introduced in all enterprises that implement individual accounts of productivity and insemination of cows.

The economic effectiveness of introducing automated systems for processing zootechnical information with SELEKS is achieved primarily by eliminating production losses due to low-quality execution of zootechnical and veterinary operations (untimely start-up, insemination, culling). According to calculations by specialists of the Latvian NII ZhiV [Scientific Research Institute of Livestock Raising and Veterinary Science], these mistakes cost about 1,500 rubles per 100 cows annually.

In Latvia the introduction of this system was completed in 1979, and now programs are being developed for SELEKS in the area of veterinary science. In the RSFSR it is planned to service 1.5 million head of cattle on the basis of this system.

As for Uzbekistan, this work is developing extremely slowly although favorable prerequisites do exist here. In 1982 a scientific-production association on breeding work in livestock raising was created in the republic; a breeding center is part of it. Work to introduce promising breeding methods and programs will be the task of the cattle breeding center. However, probably only 3.9 percent of the herd found in state enterprises will be serviced using the SELEKS program. Work to introduce the program is being carried out in 38 enterprises of four oblasts by RGVTS [Further expansion unknown] of the Uzbek SSR Ministry of Agriculture. Nevertheless, in order to increase the effectiveness of using the SELEKS system in the republic it would be expedient to encompass not individual enterprises but entire oblasts.

In recent years there has been growing international interest in the phenomenon of multiple pregnancy in livestock raising. Research by Soviet scientists has shown that cows having multiple pregnancies are characterized by a higher degree of productivity. Thus, cows that had twins once or more times surpassed cows in families without multiple pregnancies in the areas of milk yield, amount of milk fat, live weight and coefficients of lactescence and butter-fat yielding capacity of cows under the same feeding and maintenance conditions. Superiority in indicators of productivity was expressed more

strongly in cows which produced twins two or more times. The difference in indicators in comparison with cows from non-multiple pregnancy families comprised: in milk yield--620 kilograms, in quantity of milk fat--30.73 kilograms, in live weight--53.58 kilograms, in coefficient of lactescence--37.9 kilograms and in coefficient of butter-fat yielding capacity of cows--2.74 kilograms.

It is interesting to note that single-birth cows from multiple-pregnancy families are also characterized by increased productivity.

Multiple pregnancy in animals is a very promising direction in breeding work, and the republic's specialists should participate in its study and practical application.

The method of embryonic transplants is becoming more and more significant in international practice to accelerate the reproduction of highly valuable breeding animals. It enables breeders to produce up to five and more calves per genetically-superior cow. In our country this work is still experimental in nature and does not have a significant effect on production. In Uzbekistan such research is only in the beginning stage. At the same time, the promising nature and great possibilities of this method require more serious attention to it and more purposeful research.

Specialists in selection-breeding work understand well the importance of having a method that will enable them to determine the genetic lineage of animals with sufficient reliability. This type of method exists and is being used successfully--the method of immunogenetics. On the basis of analysis of blood groups it enables breeders not only to establish the reliability of the lineage of breeding animals, but also to predict the productive qualities of progeny at an early stage, to improve the reproductive capabilities of animals by means of their purposeful selection for each other, to control processes occurring in herds, lines and families under the influence of breeding and to study the possibilities of predicting the resistance of animals to various diseases.

UzNIIZh [Uzbek Scientific Research Institute of Livestock Raising] workers have determined, with the help of this method, that recording errors about the lineage of animals in breeding herds reach 90 percent for some bulls. Naturally, this has an effect on the effectiveness of breeding work. Recording errors have been found in individual enterprises. Blood groups were studied in over 20,000 head of cattle of the Black Spotted and Ayrshire breeds.

Work using immunogenetics methods promises to significantly increase the effectiveness of breeding work; for this reason it must be carried out more widely.

Modern goals standing before the republic's livestock farmers place great demands on them with regard to branch management. Further improvements in the branch depend on the degree to which the republic's breeding center and breeding services implement highly successful methods for improving breeds of cattle and for increasing their productivity.

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## Advantages of Use

Leningrad LENINGRADSKAYA PRAVDA in Russian 7 Dec 84 p 2

[Article by G. Petrov, director of the Leningrad Oblast Agricultural Computer Information Center: "EVM [Electronic Computer] on the Farm"]

[Text] Two zootechnologists-breeders were having a conversation. One of them complained that sometimes there isn't enough time to do his work, direct production work, because so much time is occupied by paper work.

"Why don't you turn to a computer for help?" asked his colleague. "We have been relying of computers for a long time. A precisely-developed mathematical system decreased our excessive paperwork by half. The machine provides the most reliable information."

I listened attentively to this conversation. The subject being discussed was the system of mathematical accounts and analyses, shortened to SELEKS (breeding, economics, system), which was in operation now in dairy livestock breeding in three of the oblast's rayons--Vsevolozhskiy, Lomonosovskiy and Volosovskiy. According to the Intensification-90 program, machine accounts are to encompass all dairy herds in the oblast.

As practical experience shows, the electronic computer helps to achieve the intensive growth of animal productivity, to utilize its genetic potential more fully and to curtail the amount of work specialists put in on documentation. The foundation for the system is primary documents that are compiled by enterprises about every animal. This data is put into the computer. The electronic "dossier" is regularly updated. The computer acts almost as an observer of all the changes that are taking place on the farm and after processing them it provides sovkhoses with documents-orders containing recommendations for work not only during the current month but all the way until the end of the year as well.

Zootechnologists of Vsevolozhskiy Sovkhoz V. V. Sinev of the livestock-raising complex and V. G. Pavlova of Ryzhiki Farm confirm that SELEKS has become an irreplaceable helper and good controller for them. "Really," clarify the specialists, "you receive tables from the computer center and after studying them for several minutes the entire work picture becomes clear. We can see the prognosis for the future." The SELEKS system helps to avoid errors in accounts and to carry out breeding operations on a higher level.

SELEKS is of interest from another point of view--on the basis of information contained in the system it is possible to calculate the individual productivity of every cow. This has interested even those sovkhoses which initially rejected our services. Now each year calculations are made for 70,000-80,000 cows and heifers, which comprises 30 percent of the oblast's herd. Each milkmaid has the opportunity to determine the genetic potential of her cows and to more precisely establish ways to achieve higher results.

The computer helps in calculating optimal feed rations as well. Moreover, the machine supplies not simply the suitable but also the least expensive ration variant for any productive group.

Enterprises that conclude agreements with the computer center with regard to introducing the SELEKS system want to have specific guarantees of its economic effectiveness. In connection with this I would like to note that it is difficult to determine direct advantages here--the system is an integral part of the economic mechanism for production management. Its effect is more perceptible the higher the operational discipline of specialists in the zootechnological and veterinary services as regards implementing the measures that are included in the program. SELEKS is not a panacea for all problems. First and foremost it helps to organize zootechnological accounts, determines the productive potential of the herd and gives direction to work, but how the enterprise deals with its tasks with the system's help will depend largely on the specialists.

I was able to talk to many of them. Some feel that expenditures for machine calculations--3,000-3,500 rubles per year--are fairly significant for the sovkhos and that the advantage is not always evident. But here is the opinion of a competent person. The senior economist of Krasnaya Baltika Association, L. N. Gamulin, presents the following examples. The association's sovkhoses spent 31,000 rubles to introduce the system. Economic effectiveness comprised 320,000 rubles. Milk production last year alone increased by almost 28,000 quintals and milk yield per forage cow--by 294 kilograms. The cost of every quintal of production decreased by 1 ruble. L. N. Gamulin feels that of course not all of these "pluses" can be attributed to the system alone, but he is deeply convinced that the SELEKS system represents a decisive turning point.

It turns out that in skilful hands the system is a dependable instrument for management. In most sovkhoses when the system is introduced a wide circle of operators is hired and trained with the help of specialists from the computer center. This is the right thing to do--these will be the people who will be working with the system. An essential interrelationship is established immediately and things start rolling faster, as they say.

I will cite the following example. Last year the computer center developed the plans--predictions on productivity and the reproduction of the herd for 46 sovkhoses. In 10 of them actual milk yield corresponded fully to computer calculations. In 20 enterprises the difference was 5 percent and in the remainder--almost 10 percent. In analyzing divergences it was established that they existed only there where the conditions for feeding and maintaining animals, labor organization and so forth had changed. But even in such cases, the system helps enterprises to more quickly discover errors and omissions and to take measures to eliminate them.

The practice of introducing economic-mathematical methods and computer technology in agricultural production shows that those who gamble on the system today are facilitating the transition of dairy livestock raising to an industrial branch with confidence.

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## REGIONAL DEVELOPMENT

### RSFSR OFFICIAL ON NONCHERNOZEM ZONE RENEWAL PROGRESS

Moscow IZVESTIYA in Russian 9 Dec 84 p 2

[Article by L. Yermin, first deputy chairman of the RSFSR Council of Ministers: "The Nonchernozem Zone: The Effect of Renewal"]

[Text] The expanses of the Russian Nonchernozem Zone are impressive: 2,000 kilometers from west to east and 1,500 from north to south. This vast region, one of the most thickly populated in the country, with one-fifth of all agricultural lands, produces about one-third of the republic's gross crop output, the same amount of meat, more than 40 percent of the milk and eggs, and almost all the flax.

The Nonchernozem Zone is also of great significance in building up the country's food stocks. In transforming this zone, as CPSU Central Committee General Secretary and USSR Supreme Soviet Presidium Chairman K. U. Chernenko emphasized at the October 1984 CPSU Central Committee Plenum, a vital role is to be played by reclamation work which is to be continued on a broad scale here.

The region does not have much naturally rich land: of 32 million hectares of arable land, for example, two-thirds are unsuitable for crops, either over-acidic or excessively moist. On the whole, however, the region's soils are responsive to fertilizers and reclamation. As a rule, there is sufficient moisture.

Large-scale projects to transform the region on the basis of intensification of agriculture and radical improvement of social problems began 10 years ago, following the CPSU Central Committee and USSR Council of Ministers decree "Measures To Further Develop the Agriculture of the Nonchernozem Zone of the RSFSR." The Nonchernozem renewal program as mapped out in the document is the first major integrated regional project in the RSFSR's agriculture.

It is difficult to overrate the help given to the zone's kolkhozes and sovkhoses. Over the 10-year period, for example, 60 billion rubles of capital investment has been assimilated--over twice as much as in the preceding 10 years. The base of the construction industry was developed intensively. Glavnechernozemvodstroy [Main Administration for Water Management Construction in the Nonchernozem Zone], a mighty organization engaged in reclamation

construction and assimilating more than 1 billion rubles of capital investment yearly, was created and is in operation.

The transformation of the Nonchernozem Zone has become a truly national effort, a "second Virgin Lands." Implementation of the integrated program is the constant focus of attention of the RSFSR Council of Ministers and its Commission on Problems of the Agroindustrial Complex, many ministries and departments, local Soviets of People's Deputies, and all farm workers. The creative effort is being participated in by thousands of collectives of enterprises and organizations in the Russian Federation as well as workers sent in from the country's fraternal republics.

Today we can state confidently that these efforts have not been in vain. The Nonchernozem Zone is steadily being transformed into a region of renewed land. In the 10-year period, the farms have been given 6.7 million hectares of improved lands, including 2.6 million drained and irrigated. Hundreds of thousands of hectares on tracts of land that were formerly considered unsuitable or inaccessible have been put into agricultural production and are working to produce a crop. The renewed croplands quickly repay the costs. In 1983, for example, irrigated lands in the zone produced an average of 688 rubles' worth of goods per hectare, while drained lands produced 192 and ordinary lands produced only 122 rubles' worth.

Soil fertility and investment payback are even higher on the leading farms. On Povadinskiy Sovkhoz near Moscow, for example, grain and feed crop yields doubled and tripled on improved lands, and all reclamation costs were recovered in 6 years.

Deliveries of equipment and mineral fertilizers to the kolkhozes and sovkhozes have increased, and the pace of construction and rebuilding of livestock units and complexes, storage facilities, and many other structures has picked up. It is sufficient to note that the amount of fixed productive capital in agriculture has more than doubled in the zone, on the average.

Villages in the Nonchernozem Zone are experiencing genuine renewal. Some 39 million square meters of housing have been put into operation in the period-- 60 dwellings per farm. But that's just the average. On many kolkhozes and sovkhozes, whole communities have sprung up, streets lined with new homes, chiefly of the farmstead type which combine the conveniences of the city with the needs of the peasant family, the traditions of rural life. Schools, kindergartens and combines, vocational-technical schools, hospitals, consumer service enterprises, and cultural and sports complexes are being built. All of this makes it possible to speak not only of modern-looking villages but also of social changes in the life of farm workers in the Nonchernozem Zone, of an improved demographic situation. Migration has been reduced sharply, almost by half, young people are more willing to stay in their home villages, and cadre problems are being resolved more easily.

Thanks to the party's and government's concern for the development of the Russian Nonchernozem Zone, kolkhozes and sovkhozes are making a greater contribution toward meeting the targets of the five-year plan and implementing the Food Program. One out of every four farms now is producing more than 20

quintals of grain per hectare, and on many farms yields have risen to 30 or 40 quintals. Livestock farming is also more productive. Last year alone, milk yields per cow rose by an average of 217 kilograms in the zone. Weight gains of livestock being fattened have risen, also their delivery weight. Gross output of agricultural products has surpassed the average annual level of the 9th Five-Year Plan by 26 percent, reaching 15.5 billion rubles. Kolkhoz and sovkhos economies are stronger. Last year they wound up with profits of 4.3 billion rubles. Moreover, the level of production profitability reached 25 percent.

These successes are gratifying, but not everything is going smoothly in regard to implementing the complex integrated program of transforming this enormous region. There are still many shortcomings and unresolved problems. The vast potential of the Nonchernozem Zone, as was noted at the October 1984 CPSU Central Committee Plenum, is far from being fully utilized. Large material-technical resources and the productive capital that has been built up here have yet to produce the payback that they can and should. A number of farms in the zone are producing 1.5 to 2 times smaller farm crop yields from reclaimed lands than the projects called for.

One of the main reasons, as we see it, is that in carrying out water management construction, measures having to do with agricultural assimilation of the reclaimed lands were manifestly underestimated. Planned volumes of work on infrastructural development of these lands did not always meet the needs of the farms. The result was that the drained and irrigated lands were put into production, but the construction of housing, cultural, and service facilities was put off until later. Not infrequently, this led to a situation in which the area of improved lands was expanding yet there was no one to cultivate them.

In addition, not enough on-farm roads were built on these lands; this also reduced the effectiveness of their use.

To put an end to this abnormal situation, planning, agricultural, and water management organs are presently undertaking decisive measures to ensure stepped-up construction of assimilation facilities on reclaimed lands.

Under present conditions, when the construction of new reclamation systems is proceeding on a broad scale in the Nonchernozem Zone, it is also essential that efforts to radically improve systems that have already been built, through rebuilding and technical retooling, be brought to the forefront.

Also leaving much to be desired is the organization of the operation of reclamation systems. Recently, to be sure, the republic's Ministry of Reclamation and Water Management has undertaken measures to set up unified rayon and inter-rayon repair-and-operation associations within RAPOs [rayon agroindustrial associations]. They have been functioning for 1 year now in Kaliningrad Oblast, for example, and initial experience has shown that repair and technical maintenance of the systems is proceeding more successfully.

A number of farms having large tracts of drained and irrigated lands, however, have undertaken to set up their own operational services. Experience has

shown that such units make it possible to make more productive use of renewed lands. As in the case of the repair-and-operations associations, it is essential that they be provided with material-technical resources on a regular schedule.

The rayon and oblast agroindustrial associations of the Nonchernozem Zone could do a great deal to ensure closer coordination of the efforts of the kolkhozes, sovkhoses, and water management organizations. Unfortunately, however, they have not yet gone deeply enough into the matter of improving the utilization of reclaimed lands.

A substantial reserve for boosting the payback from capital invested in land reclamation, as we see it, lies in expanding soil improvement work. On the whole, however, work of this sort in the zone has been left uncompleted.

A year ago the republic's Council of Ministers focused agricultural and water management workers' attention on this serious shortcoming. Immediately they generalized the work experience of the soviet and agricultural organs, kolkhozes, sovkhoses, and reclamation organizations of Tyumen Oblast who, having set up specialized soil-improvement detachments, have managed to put 150,000 hectares of new and cultivated lands into production in the past 3 years. Moreover, all outlays have already been paid off through increased yields. The value of the Tyumen reclamation workers' experience is that they are doing the work on unified tracts, taking a fully cultivated hectare as the basis, with soil-improvement work conducted in conjunction with drainage and a whole array of agrotechnical measures to ensure high fertility.

In speaking of lessons and reserves, we should also mention the necessity of improving the fertility of Nonchernozem lands by further increasing the application of organic fertilizers and carrying out large-scale work on the liming of acid soils. Unfortunately, the use of these powerful levers of intensification is also lagging. The application of mineral fertilizers in the zone as a whole more than doubled in 1983 compared with 1970; the increase in organic fertilizers was only 67 percent. The utilization of peat in the preparation of organic fertilizers is even less satisfactory. A substantial portion of it continues to be burned in furnaces rather than going to increased soil fertility. The situation is made even worse by the fact that plans and targets for liming acid soils go unfulfilled year after year, resulting in a sharp decline in the effectiveness of the mineral fertilizers applied.

Feed production remains an acute problem. Enterprises of the USSR Ministry of Machine Building for Livestock Farming and Feed Production are behind in their obligations to the farmers of the Nonchernozem Zone, because they have failed to deliver a number of essential items of machinery and equipment, especially those necessary to produce and prepare feeds.

More effective help is needed for the economically weak farms in order to make up their lag faster.

Nor is everything going well in the construction of housing and social, cultural, and service facilities. In particular, very few houses of the



farmstead type are being built in Vologda, Kalinin, and Kostroma oblasts and the Komi ASSR. And it must be stated frankly that for these shortcomings in carrying out the construction program a large share of the blame goes to the union construction ministries. Not one of them has fulfilled rural contract work plans either in the 10th or the current five-year plan.

There are other shortcomings as well that are holding back the development of the zone's agriculture.

The RSFSR Council of Ministers, republic ministries and departments, and local soviet, agricultural, and water management organs are aware of the shortcomings that were discussed at the October 1984 CPSU Central Committee Plenum, and they are taking practical measures to eliminate them in order to complete the agricultural year successfully and properly organize livestock wintering.

The RSFSR Supreme Soviet session that concluded the other day adopted the Law on the State Plan of Economic and Social Development of the RSFSR for 1985. The work of the session took place under the large influence of the recent speech by Comrade K. U. Chernenko at a meeting of the CPSU Central Committee Politburo. Deputies emphasized that positive advances in the economy must not only be reinforced but multiplied through joint efforts. This also applies to reclamation.

In the concluding year of the 5-year period, plans call for channeling about 4 billion rubles of capital investment into reclamation work, a rise of 5.2 percent. A substantial portion of the funds will go to the Nonchernozem Zone. It is the duty of local soviets, water management organs, and agroindustrial associations to do what is necessary to see that these funds are fully assimilated to produce a big payback. It is essential to consistently step up the pace and enhance the quality of land improvement. To implement the Long-Range Reclamation Program and enhance the effectiveness of utilization of reclaimed lands, as endorsed by the October 1984 Plenum, plans call for doubling the reclaimed lands area in the RSFSR to between 18 and 19.5 million hectares. This translates into the creation of large zones of guaranteed crop yields both in the southern part of the republic and in Siberia, the Far East, and the Nonchernozem Zone.

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AGRO-ECONOMICS AND ORGANIZATION

MINISTERS, OFFICIALS COMMENT ON PRIVATE PLOT ROUND TABLE

Moscow SEL'SKAYA NOV' in Russian No 12, Dec 84 pp 14-15

[Comments on round table discussion by A. I. Iyevlev, USSR Deputy Minister of Agriculture; A. S. Davydov, Director of the Department on Questions Related to the Agro-Industrial Complex of VTsSPS [All-Union Central Trade Union Council]; V. A. Sokolov, member of RSFSR Gosplan; N. A. Pospelov, RSFSR Deputy Minister of Agriculture; N. M. Kozyrev, Ukrainian SSR Deputy Minister of Agriculture; A. A. Chernyavskiy, Belorussian SSR Deputy Minister of Agriculture; S. A. Abdil'din, Kazakh SSR Deputy Minister of Agriculture; B. P. Tobilevich, Director of the Administration of Planning and Building of Rural Settlements of Gosgrazhdanstroy [State citizen's building association] of USSR Gosstroy; V. M. Sinyakov, Director of Glavkoopzagottorg [Main administration for trade and procurement] of USSR Tsentrosoyuz [Central Union of Consumers' Societies]; G. D. Golubov, Director of the Administration of Economic Law and member of the board of the USSR Ministry of Justice: "'What Do We Expect From the LPKh [Private plot]?'" Reference article from "Sel'skaya Nov'" No 6, Jun 84 was published in USSR Report: AGRICULTURE, JPRS UAG-84-034, 4 Sep 84 p 76]

[Text] "What Do We Expect From the LPKh?" was the title of an article published in the sixth issue of SEL'SKAYA NOV', 1984 on a round table discussion conducted by the editors with the participation of scientists-agrarians and representatives of the USSR Ministry of Agriculture and other organizations.

The response to SEL'SKAYA NOV' is as follows:

[By A. I. Iyevlev, USSR Deputy Minister of Agriculture] The USSR Ministry of Agriculture has examined the questions raised during the round table discussion.

The journal illuminates, in a timely manner, the urgent problems related to continued development of the private plot, the solution of which will to a large degree affect agricultural production output in the private sector and the active participation of citizens in public production.

It was correctly noted that after the passing of the well-known resolutions by the CPSU Central Committee and the USSR Council of Ministers on the given question, the situation in the private plot noticeably improved. This is the result of the great help given to the population with regard to acquiring cattle, feed supplies, the cultivation of farm plots, and so forth.

Participants in the round table noted, not without basis, that there are still many difficulties and unsolved problems in this area. It was correct to make a priority of the goal of improving the self-sufficiency of the rural population in terms of food as well as of the goal of having citizens and not someone on the side determine the volume of production within the private plot.

The problem of raising vegetables in private plots on covered ground--in hot-houses, seed beds and under a cover--is very urgent. In connection with this, it should be noted that the question of the size of hothouses and their designs require supplementary examination in the corresponding ministries and departments with a consideration of the regional characteristics of every zone in the country.

Round-table participants correctly noted the necessity to orient the private plot more toward better ties with the kolkhoz market.

A study of the local situation attests to the fact that an increase in the number of livestock and in production output in private plots has been achieved primarily through those citizens who had rural farms previously. By utilizing the aid of the state, kolkhozes and sovkhoses, they are increasing production output. As for the rest of the citizens, who did not privately own livestock and fowl, they are slow to become involved in this even now. Thus, the proportion of households of kolkhoz farmers, workers and employees without any type of livestock or fowl in their possession is about one-third, without cattle--52 percent and without hogs--67 percent.

This is why the journal, SEL'SKAYA NOV', should give more attention in the future to the problems related to recruiting the entire population for the production of agricultural products so that every rural family would have a garden and would raise livestock and poultry.

[By A. S. Davydov, director of the Department on Questions Related to the Agro-Industrial Complex of VTsSPS] The material presented in the discussion on "What Do We Expect From the LPKh?" was examined with great attention and interest in the VTsSPS Department on Questions Related to the Agro-Industrial Complex.

It is true that under conditions of intensive development of the agro-industrial complex in this country, the lesser forms of land management such as private plots and collective horticulture and gardening are making a transition to intensive paths of development.

In connection with this the problems of legal and economic regulation of this category of enterprises, as mentioned by the participants in the discussion, appear to be quite urgent.

[By V. A. Sokolov, member of RSFSR Gosplan] RSFSR Gosplan examined the materials from the round table meeting published in the journal SEL'SKAYA NOV' under the title, "What Do We Expect From the LPKh?"

In 1982 RSFSR Gosplan, with the participation of interested ministries and departments, local soviets and scientific-research institutions, developed

a special goal-oriented and comprehensive program, "Increasing Production Output in Livestock Raising and Farming on the Private Plot."

This program is directed at achieving coordination among the efforts of all ministries, departments and organizations in order to carry out an entire complex of interrelated measures on the overall development of the private plot and on the more complete utilization of its production potential to increase agricultural production in the period to 1990.

Most of the questions discussed at the round table meeting were reflected in the aforementioned comprehensive goal-oriented program.

On the basis of tendencies that have been developing recently, this document indicates specific ways RSFSR ministries and departments, local agricultural organs and directors of enterprises can render practical aid to the population to develop the private enterprise, mentions ways to improve material-technical supplies to the private plot and to strengthen interrelations between the private plot and procurement organizations, and foresees the development of collective forms of organization of the private plot and improvements in their management.

[By N. A. Pospelov, RSFSR Deputy Minister of Agriculture] The RSFSR Ministry of Agriculture became familiar with the materials of the round table as presented in "What Do We Expect From the LPKh?", published in the sixth issue of the journal in 1984, and feels that the discussion on this theme is both timely and interesting.

Participants in the round table touched on a sufficiently broad circle of questions and problems related to the development of the private plot; a number of valuable opinions and proposals were presented.

RSFSR Minsel'khoz [Ministry of Agriculture] supports the proposal of M. I. Kozyr' and V. A. Yerofeyevskiy concerning the confirmation, following legal procedures, of the Resolution on the Private Plots of USSR Citizens, which would reflect questions of legal and economic regulation of the private plot in the light of modern requirements.

[By N. M. Kozyrev, Deputy Minister of Agriculture of the Ukrainian SSR] The questions raised in the article, "What Do We Expect From the LPKh?" are of great significance for the implementation of measures developed at the 26th party congress and the May 1982 and subsequent plenums of the CPSU Central Committee relating to the development of the private plots of rural residents.

It is true that in the organization of production and procurement of agricultural products on private plots there are a number of unsolved problems of a socio-economic and legal nature. We still do not have a model proposal about the private plot; there has been no development of the functional obligations of the deputy sovkhoz director, the kolkhoz chairman or the specialist on the question of managing the private plot. Questions that have not been dealt with include payment of hospital bills and provision of vacation time for individuals who fatten livestock belonging to the kolkhoz or



sovkhoz, wage payments for raising livestock, bonuses for livestock of increased weight and the amount of vacation time in return for the sale of concentrated feeds and the issuance of feeds for raising animals in private plots.

These and a number of other unsolved questions to a certain degree hinder improved work in the area of production and procurement of agricultural products on private plots.

In the Ukraine efforts are being made to find solutions to these problems, both in theoretical and practical terms.

[By A. A. Chernyavskiy, Belorussian SSR Deputy Minister of Agriculture] The BSSR Ministry of Agriculture examined the questions raised in the article, "What Do We Expect From the LPKh?" and reports that the republic has developed a certain system for organizing the management of the private plot; close interrelations between kolkhozes, sovkhozes and families having private plots have been organized. In recent years as a result of the implementation of a whole series of measures on rendering aid to citizens to develop the private plot the tendency to decrease the size of the herd has been stopped and the procurement of agricultural products from the population has increased.

With the goal of limiting the use of the private plot as a source of non-labor income, the BSSR Council of Ministers confirmed a list of economic and consumer structures and buildings (including hothouses and coverings for cultivating vegetables) which may be erected by citizens on the land allocated them for private plots; a size limit for these structures and buildings was also established.

We feel it is essential to expand the network of reception-procurement points-stores in order to fully achieve the procurement of the fruits, vegetables, poultry, rabbits and other products produced by citizens on private plots.

In rayon centers there should be an organization of mobile technology and inventory points for the private plots of the population to supply them with repair services and spare parts.

The BSSR Ministry of Agriculture and its local organs are making every effort to further effect the development of the private plot and on this basis to achieve an increase in agricultural production output.

[By S. A. Abdil'din, Kazakh SSR Deputy Minister of Agriculture] The Kazakh SSR Ministry of Agriculture feels that the questions raised at the round table are vital for all republics in this country, including Kazakhstan.

It has become very urgent to legalize, in union directives, questions related to the management of the private plot.

The Resolution on the Private Plots of USSR Citizens should be the single normative act that deals with questions related to managing the private plot. The timely development of this document with precise regulations of all aforementioned and other questions will facilitate improved work on carrying out the Food Program.

[By B. P. Tobilevich, director of the Administration of Planning and Building of Rural Settlements of Gosgrazhdanstroy of USSR Gosstroy] At the request of the directors of Gosgrazhdanstroy the administration examined the materials of the round table discussion on the subject, "What Do We Expect From the LPKh?" and noted the timeliness of the social-economic and legal approach to the given problem.

Considerable attention is being given to questions of spatial-territorial solutions to building on farmsteads within the structure of rural settlements as well to questions of distributing privately-owned objects on private plots. Thus, addenda and changes have been introduced in Section 5, Chapter P-60-75, SNiP [Construction Norms and Regulations], "The Planning and Building Up of Cities, Villages and Rural Settlements," as well as in SNiP P-L.1-71, "Residential Housing." There was a change in the Resolution on the Make-Up of Expenditures and the Order for Including Them in Cost Estimates for Residential Building, SN 6-71, to include the cost of work to build farm structures with facilities to house agricultural inventory and solid fuel as well as livestock and poultry, basements and farmstead lavatories and cess-pools.

Questions of private-plot development are constantly within the sphere of activities of architectural-building organs because planning and composition-spatial decisions depend on them.

[By V. M. Sinyakov, director of Glavkoopzagottorg of USSR Tsentrosoyuz] The discussion among specialists at the round table and letters from readers have raised very urgent problems concerning the further development of private plots; the solution of these problems will affect the increase in agricultural production output in the individual sector, improvements in sales of these products, the correct evaluation of the economic and social role of the private plot and the organization of its legal management.

Organizations of consumers' cooperatives, with the support of party and soviet organs locally, has begun to render more aid to private plots to increase agricultural production output, taking measures to improve the organization of procurement of surplus products and to expand trade using these products in cities and industrial centers of the country.

With this goal in mind, the material-technical base of procurement and trade is being strengthened. The forms and methods of organizing procurement are being improved; each year farmsteads are surveyed to find agricultural resources and contracts are concluded with the population for the sale of surplus products. The right of sale of commodities is utilized when concluding contracts. This year over 10 million such contracts have already been concluded.

In order to stimulate increased production and procurement of agricultural products, especially meat products, in private plots, at the request of Tsentrosoyuz, the USSR Council of Ministers has allowed consumers' cooperatives to create a fund for providing production incentives for suppliers and procurement workers and to carry out the counter-sale of concentrated feeds and high-demand consumer items to active suppliers who have concluded contracts

with consumers' cooperatives for the sale of agricultural products. In 1982-1983 alone, the incentives fund was used to pay out about 20 million rubles to active suppliers in the form of sales of livestock and poultry according to bonus prices, valuable gifts and bonuses. The sale of agricultural equipment, poisonous chemicals and fertilizers to the population has been organized everywhere.

During 3 years of the current five-year plan 7,416 standard reception-procurement points have been built and put into operation (as compared to the goal of 7,220), and at the present time over 10,000 such points are in operation.

The measures that have been taken have facilitated a significant increase in the procurement of agricultural products from the private sector in recent years. In 1983 agricultural products procured according to contractual prices were worth a total of 4.7 billion rubles, or greater than 1978 levels by a factor of 1.7.

It should be said that the production of agricultural products by the population is deserving of support. However, here it is important to remember that the production of such products by citizens should in no way diminish their active participation in public production.

Article 13 of the USSR Constitution says citizens may use plots of land that have been allocated for private plots. We understand that in its essence the private plot is subsidiary and supplementary in nature and that above all it serves to provide self-sufficiency with regard to products that can be produced on the private plot so that they do not have to be purchased from stores.

After the satisfaction of personal needs from private plots in the necessary amount and the widest possible assortment, production specialization in a particular crop is desirable, with a consideration of the utilization of favorable natural-climatic conditions, demand and other factors. Specialization significantly increases the production of commodities and facilitates the growth of surplus for sale at kolkhoz markets and by procurement organizations. This would correspond to the correct and efficient direction for managing the private plot.

We support V. R. Belen'ka from the point of view of the need to take measures of an economic type in order to achieve proper specialization. In practice, procurement organizations of consumers' cooperatives have recently been conducting such work with the population by means of contracts, which provide the foundation for orders for production output, delivery schedule, measures to provide incentives and other conditions.

The question of cultivating vegetables and early greens in hothouses, hotbeds and under covers has been raised in a timely manner. Specialists provide important explanations regarding the possibility of using coverings on complete sections of land. Really, it is not wise to exclude and reject coverings, which protect the harvest from the caprices of nature and which make use of free solar energy.

Finally, the question of the legal aspects of the private plot was very correctly touched on. Many negative phenomena, various false rumors and managing by means of orders and decrees, which hinder the development of the private plot, are to a large degree based on the fact that until now there has been no normative act to consolidate the legal status of the private plot. Thus the time has come to pass as law the "Resolution on Private Plots of Kolkhoz Farmers, Workers, Employees and Other Citizens," which must establish a single legal regimen for managing these enterprises.

The management of Tsentrosoyuz has given consumers' cooperatives the task of helping in every way possible to expand agricultural production output on private plots and of making sure that no standard-quality products offered for procurement locally are turned away.

[By G. D. Golubov, director of the Administration of Economic Law and member of the board of the USSR Ministry of Justice] The proposal on the development of a single normative act that would deal with the basic problems involving the management of private plots will be examined during the preparation of the plan draft on bills for 1986-1990.

This proposal is supported in their responses by L. P. Pleskach, Deputy Minister of the Administration of Economic Law of the Ukrainian SSR Ministry of Justice and Ye. A. Chkanikov, Deputy Minister of Justice of the Belorussian SSR.

[From the editors]. Readers of the journal will read with interest the business-like and interested responses of ministries and departments, attesting to their serious approach to the problems of the private plot.

Unfortunately, not all problems presented in the journal article were convincingly elucidated.

Readers will hardly be satisfied by the response of Gosgrazhdanstroy, which did not reveal the particulars of the "additions and changes" in building norms and regulations, as well as changes in "instructions on the composition of expenditures..." Not a word was said about hothouses and other methods of enclosing crops.

The numerous owners of private plots will be disappointed by the report of the USSR Ministry of Justice about the schedule for examining the proposal on developing a single normative act related to questions of the private plot.

The editors intend to continue to elucidate urgent problems related to the private plot while striving for thought-out and well-grounded decisions. This will, as is justifiably stated on one of the answers published here, "to a large degree affect the increase in agricultural production output in the private sector as well as the active participation of citizens in public production."

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AGRO-ECONOMICS AND ORGANIZATION

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ROLE OF PURCHASE PRICE MARK-UPS EXAMINED

Effectiveness of Application

Moscow EKONOMIKA SEL'SKOGO KHOZYAYSTVA in Russian No 11, Nov 84 pp 42-46

[Article by N. Borkhunov, candidate of economic sciences, S. Yakovlev, junior scientific worker (VNIESKh [All-Union Scientific Research Institute of Economics in Agriculture]), and G. Kaliman, senior scientific workers (NII [Scientific Research Institute] of Prices): "On the Effectiveness of Mark-ups of Procurement Prices"]

[Text] For the second year in a row the country's kolkhozes and sovkhoses have sold products to the state at higher procurement prices (by 15-17 percent) than in 1982. Taking supplements into account, payments have increased by over 30 percent. This has strengthened cost accounting, increased the repayment of credit and decreased budget grants for the branch. The increase in procurement prices and establishment of a new type of supplement to them also had other consequences. The significance of traditional forms of differentiation of procurement prices decreased and price zones themselves became enlarged. Existing procurement prices began to more fully reflect labor expenditures for production output in kolkhozes and sovkhoses with a relatively high level of development. Compensation for expenditures in low-profit and unprofitable enterprises took the form of differentiated mark-ups to procurement prices. As a result, a method has developed to equalize management conditions based on coordinating supplements and prices, budget financing and other sources of monetary resources. In this way conditions for the sale of products to the state were brought closer to individual features of production, which provided additional opportunities for expanded reproduction by means of enterprises' own resources in previously unprofitable kolkhozes and sovkhoses. Here the practical importance of periodic reexaminations of procurement prices was considered.

As we know, the resolution of the CPSU Central Committee and USSR Council of Ministers, "On Improving Economic Interrelations Between Agriculture and Other Branches of the National Economy," foresees that plan draft proposals for the USSR's economic and social development and proposals on procurement prices for agricultural products and supplements to them are made simultaneously. Already in 1984 problems related to further improving the system of procurement prices are being dealt with. Their level and dynamics depend on

whether kolkhozes and sovkhozes will be able to overcome the tendency to decrease the effectiveness of resources, to hold back the growth of costs and to maintain the recommended relationship between growth in labor productivity and payment for labor. Authentic cost-accounting relations foresee a clear form of ties between the position of the labor collective and cost-accounting results of its activities and equal rights for all enterprises making up the APK [Agro-Industrial Complex].

Measures directed at increasing the role of procurement prices must be strengthened by economic relations in which the working collective would have a noticeable advantage over a collective whose performance was inferior. Finally, a great deal is determined by the skill to locally utilize opportunities arising from coordinating current price lists and mark-ups. A careful substantiation of the list of enterprises which have the right to receive price mark-ups enables us to increase its effectiveness. Periodic revisals of such a list when preparing proposals to improve price formation for the next five-year plan would serve as a means of supporting the authority of mark-ups; with their help it would be possible to make important corrections in branch income on the basis of procurement prices. We will illustrate this latter circumstance with the following example. The ratio of existing procurement prices for grain, potatoes and cattle is 1:1.3:17.4 if mark-ups for quality are considered, and 1:1.2:15.7 if mark-ups for unprofitable enterprises and for exceeding average procurement levels are considered.

Within the practice of price formation for agricultural production different mark-ups of procurement prices are utilized--for quality, for exceeding the average level of product sales for the 10th Five-Year Plan, and for low-profit enterprises. Mark-ups make prices flexible and the effect of prices on the economies of enterprises increases. Price mark-ups for high quality stimulate improvements in assigned consumer properties of products and relate the size of existing monetary profits to end results. They have been established for many types of products bought by the state and are very effective if weighty additions of monetary resources are promised. Their mechanism of action is understandable and simple and the conditions under which they can be received are feasible. An example would be price mark-ups for calves with increased live weight. They are paid out to kolkhozes, sovkhozes and other agricultural enterprises and organizations at a rate of 35 percent of procurement price levels for sales of live weight of 350-400 kilograms and of 50 percent of procurement price levels for sales of live weight above 400 kilograms. The result of this mark-up is a large proportion of heavy cattle in procurement and supplementary monetary income for kolkhozes and sovkhozes. Another positive example is mark-ups for sugar content of sugar beets. The size of the mark-up per percent sugar-content above the established base norm is 4 rubles per ton (instead of 1 ruble paid previously), and deductions equal 2 rubles per percentage point below base-level for sugar content. Already in 1982 and 1983 the sugar content of sugar beets increased. Added state expenses to provide incentives for increases sugar content are repaid by means of curtailing expenditures for harvesting, shipping, storing and processing sugar beets. At the same time, even high mark-ups for wheat of durum and strong varieties have had almost no effect on their production because the conditions that were set for producers were difficult to achieve.

As the system of procurement prices develops mark-ups for quality also improve--their size changes and the nomenclature of products for which they are paid out change. However, the expediency of mark-ups for quality does not arouse doubts; they continue to be developed. For example, beginning with the 1984 harvest the reception of raw cotton from cotton-sowing enterprises of the Uzbek SSR is carried out with payments depending on its quality and content of cotton fiber.

Mark-ups for surpassing the established base level of procurement are called upon to interest enterprises in supplementary growth of production output. Growth mark-ups for procurement prices for products sold to the state by kolkhozes and sovkhoses have been practiced since the 1930's. Their significance and forms changed. In accordance with the decisions of the March 1965 Plenum of the CPSU Central Committee, 50-percent mark-ups were established for rye and wheat products sold above the level of the procurement plan. In 1966 this type of payment system was expanded to include millet, feed barley, oats, corn and peas; in 1968--flax stock and hemp, in 1970--livestock, poultry, milk, wool and eggs, in 1972--sugar beets, tea and tobacco and in 1976--flax products and karakul. By the late 1970's mark-ups for exceeding planned procurement levels were established for all the main types of agricultural products. However, they did not serve as an effective means for stimulating production growth. For this reason, beginning in 1981 another mark-up was introduced--for exceeding the average procurement level reached in 1976-1980.

These mark-ups are paid out for grain, sunflowers, sugar beets, raw cotton, flax products, soybeans, hemp, potatoes, tea leaves, tobacco, hops, mustard, essential-oil crops, poppies, livestock and poultry, milk, wool, eggs, karakul and velvet antlers. The given form of mark-ups is related not to the procurement plan but to a growth in procurement. On this basis, a growth in production of commodity products is expected, especially in less-developed enterprises, since the relationship between the mark-up received and the products sold is manifested in a simple and comprehensible form. The volume of mark-ups for surpassing the average level should increase from year to year with normal production growth. With a transition to a new frame of reference there is a decrease in payments, which then again increase. Their role is to facilitate the achievement of publicly-important goals, the development of positive tendencies in the branch and an increase in the effectiveness of resources.

The transition from mark-ups for overfulfilling procurement plans to mark-ups for surpassing the level as a whole corresponded to the interests of agricultural production, did not give rise to interests in enterprises that contradict the interests of society as a whole and related the receipt of supplementary resources to a growth in procurement. Already in 1982 the kolkhozes and sovkhoses of the USSR Ministry of Agriculture were paid more than in the more favorable years of the 10th Five-Year Plan for surpassing the average procurement level. In 1983 total mark-up payments exceeded 5.5 billion rubles.

Mark-ups of procurement prices for surpassing average procurement levels became an important channel for the receipt of monetary resources to agri-

cultural enterprises. At the same time, their effectiveness depends to a large extent on the level of procurement prices themselves. An increase in prices in 1983 resulted in a growth of mark-ups by about one-third in comparison to conditions existing in 1981. In the future the effectiveness of mark-ups must increase in connection with a general improvement of the financial status of enterprises and with an increased role for cost-accounting relations.

Of practical interest is the question of the special characteristics of the action of growth mark-ups in enterprises with different levels of economic development. Calculations have shown that total mark-ups for exceeding plan levels per ruble of monetary profits from the sale of products to the state were approximately equal in economically-strong as well as low-profit and unprofitable sovkhoses--3.3 and 3.4 kopecks respectively. The situation changed with the transition to the new system of stimulating increased procurement. Growth in mark-ups occurred in more developed sovkhoses as well--by 18 percent per ruble of monetary profits. However, in low-profit sovkhoses total mark-ups were 20 percent higher in 1981-1982 whereas growth equalled 38 percent. Thus, there is confirmation of the opinion of those economists who feel that the payment of mark-ups for surpassing achieved levels meets the needs of economically less-developed enterprises above all. A consideration should also be made of regional characteristics of the action of procurement-price mark-ups for surpassing the average procurement level. Sovkhoses of the RSFSR, Ukrainian SSR, Lithuanian SSR, Latvian SSR and Armenian SSR found the introduction of the given system of mark-ups to their advantage. If this system is retained during the 12th Five-Year Plan and with the transition to a new base level of procurement in calculations (1981-1985), by the end of the five-year plan kolkhozes and sovkhoses will receive mark-ups for exceeding average procurement level that will be greater by a factor of 1.7-1.9 than those received in 1984-1985.

In our opinion, the practice of these types of mark-ups should be retained in 1986-1990, since the mark-ups are sufficiently weighty (50 percent of procurement price) and they interest enterprises in increasing procurement volume. At the same time, they act as a supplementary stimulus to the development of economically-weak enterprises.

Nevertheless, there should be a reexamination of products for which the given mark-ups are in effect. Products should be excluded from the list if further production growth of these products will be at the expense of quality.

At the same time, mark-ups for procurement growth are not paid for a great number of products--makhorka [*Nicotiana rustica*], oil-bearing flax, tanning raw materials, the castor plant and so forth. It is evident that during the 12th Five-Year Plan the list of products for which mark-ups are paid must be expanded.

There are several different opinions about the role of procurement-price mark-ups for low-profit and unprofitable enterprises. Some feel that they do not rise above the problems of differentiation of procurement prices. Others feel that mark-ups for low-profit and unprofitable enterprises are borne of



the same principles as land rents. In our opinion, current price lists and the given form of mark-ups comprise an integral whole. Actually, although the level of procurement prices without a consideration of mark-ups for low-profit enterprises is higher by 15-17 percent than in 1982, it is still insufficient for a wide circle of enterprises.

In practice, the close tie between mark-ups and procurement prices is revealed. Right now procurement prices are differentiated by larger zones (territories) and to a lesser degree than previously; they take into account the special characteristics of reproduction in agricultural enterprises. The unification of the current price and mark-ups brings procurement prices closer to individual production conditions. This is a new method for solving the problem. With differentiation, the level of procurement prices depends on labor expenditures for production output or on the supply of resources in the enterprise. It is lower in places where the objective conditions of reproduction are better and where the production potential is higher.

In forming procurement prices in accordance with publicly-essential labor expenditures in relatively worse conditions, income can be equalized by means of fixed or rent payments established per unit of land area. Payments for land are determined by its quality and by capital supplies. The existing system of "procurement prices--mark-ups" is built on a different basis--the state provides enterprises that produce products under more complex conditions, at a loss or at a low profit with solvency by means of additional monetary receipts.

Less-developed enterprises received significant resources in the past as well. In this case the state budget and credit were widely utilized. This method was specific in nature, which satisfied the interests of planning and management organs. But negative consequences existed as well--a growth in indebtedness, a narrowing of cost-accounting relations, and an absence of a natural relationship between procurement volume and financial actions.

Mark-ups of procurement prices for low-profit and unprofitable enterprises are also specific in nature. Their volume is proportional to the procurement of products, and the method of payments itself strengthens cost-accounting principles. For this reason the effectiveness of supplementary financial receipts as a result of mark-ups must be greater than the effectiveness of the same volume of resources obtained previously in the form of allocations from the budget or of credit. Since the level of mark-ups to procurement prices fluctuates from 0 to 75 percent, mark-ups have taken on the function of equalizing income. At the same time, the procurement price depleted them.

Improving the economy of lagging enterprises is a most important national economic task, the fulfillment of which will be greatly affected by procurement-price mark-ups established for low-profit and unprofitable enterprises. It has not been ruled out that with their help it will be possible to iron out the contradictions between single procurement prices for sovkhozes and kolkhozes and a different structure for providing financial supplies for these enterprises. In sovkhozes almost one-fifth of financial resources came from the budget. In kolkhozes there was practically no such source. For this

reason, with approximately the same need for resources, single procurement prices did not correspond to real economic relations within agriculture. This gave rise to almost unlimited credit for kolkhozes, the depletion of the return on credit and a complication of management conditions.

Also valuable is the fact that mark-ups to procurement prices for low-profit and unprofitable enterprises are directly related to the sale of products to the state. Their proportion in monetary profits is high. Financing by means of prices also makes it easier to analyze and control the use of mark-ups in enterprises. The greatest return should be expected from the ties between the system of mark-ups and the volume of products sold to the state.

The effectiveness of the aforementioned mark-ups should manifest itself in positive developmental tendencies--in the accelerated pace of growth of production output, yield and productivity, in a slowing down of the pace of increasing costs and in optimization of proportions between growth in wages and labor productivity. Data from several years will be required to determine and analyze these tendencies. We should also consider that the factor of effect of mark-ups on the economy usually cannot be singled out in pure form. There are many other factors that act in the same direction--other mark-ups, purely technological factors, financing, credit, measures to provide material incentives for labor and so forth. Nevertheless, the first results for 1983 are undoubtedly of interest.

In recent years, economically less-developed sovkhoses experienced a slower pace of development than economically-strong sovkhoses. During unfavorable years the pace of decreasing gross production output was higher in the former. In 1983 low-profit and unprofitable sovkhoses in the country as a whole experienced approximately the same growth in physical volume of commodity production as other sovkhoses. Thus, the growth pace of production in these enterprises appeared much more favorable than previously.

Table 1  
Growth in Milk and Potato Production in 1983 as Compared to 1979-1981 Levels  
in the Sovkhoses of Moscow Oblast, percent

Groups of enterprises by level of mark-up payments to procure- ment prices	Milk		Potatoes	
	Production per 1 cow	Cost of 1 quintal	Yield per hectare	Cost of 1 quintal
Not receiving mark-ups	5.8	13.8	38.1	8.4
Receiving mark-ups of the following size:				
10 percent	6.3	14.2	52.2	3.9
30 percent	7.5	18.6	45.4	-2.1
60 percent	6.2	12.5	54.3	-5.3

Table 1 presents data on Moscow Oblast. Low-profit and unprofitable enterprises experienced a growth in types of products important for the oblast that was somewhat higher than that of more developed enterprises; moreover, in the

former, production growth occurred primarily as a result of increased productivity and yield, whereas in the latter it occurred by means of an increase in the size of the herd and in sowing area. In low-profit and unprofitable sovkhoses there were more favorable indicators for the production cost of potatoes, milk and beef. This speaks in favor of mark-ups for procurement prices. Those enterprises which sold more products felt their stimulating role. The effectiveness of mark-ups for procurement prices will depend to a large extent on how much they will influence every production collective, on how much of a change there will be in the relationship of kolkhozes and sovkhoses and the credit system and state budget and on how much the rights of enterprises and their cost-accounting responsibility will increase.

The equalization of great differences in management conditions of kolkhozes and sovkhoses existing in unequal objective reproduction conditions was effected in several different ways until now--with the help of differentiation of procurement prices, budget financing, production specialization and so forth. By means of mark-ups of procurement prices for low-profit and unprofitable enterprises the same task is dealt with on a new level. Thus, with less differentiated procurement prices than previously it has become possible by means of mark-ups to establish payments for products according to groups of enterprises. For example, in Moscow Oblast until 1983 prices for milk were differentiated according to three zones. Now these prices are differentiated according to 10 groups of enterprises, with a consideration of mark-ups. A more fractional differentiation of payments established in accordance with base profitability considerably ironed out differences in levels of total profitability already in 1983 (Table 2).

Table 2  
Level of Profitability (Loss) in Sovkhoses of Moscow Oblast in 1983  
With and Without a Consideration of Mark-ups for Low-Profit Enterprises, %

Groups of enterprises according to level of mark-ups of procurement prices	1979-1981	1983	Without consideration of	
			mark-ups	mark-ups and increased prices
Not receiving mark-ups	25.9	43.1	43.1	34.9
Receiving mark-ups in the following amounts:				
10 percent	- 0.1	22.8	15.1	5.4
30 percent	- 13.1	19.9	2.1	- 4.8
60 percent	- 39.2	24.8	-11.0	-15.9

There is another factor that is important: as calculations show, profitability in lagging sovkhoses in the oblast grew not only by means of the general increase in procurement prices and the introduction of mark-ups, but also as a result of increasing the effectiveness of production resources. In some sovkhoses, as for example Lesnyye Ozera Sovkhoz of Solnechnogorskiy Rayon, the profitability level without a consideration of mark-ups and increased procurement prices increased by 20 points, which was the result of a decrease in the cost of milk (by 1 percent), potatoes (by 6 percent) and beef (by 1 percent).

Increasing profitability and equalizing its level is important in and of itself. The question remains regarding where supplementary resources will be directed by enterprises themselves. Actually, these resources can be utilized not to expand and strengthen the technical base of production but for non-production consumption, bonuses, increasing wages and so forth. If these misgivings are justified, the growth pace of wages per worker in enterprises receiving mark-ups would be considerably higher than in enterprises that are not included in the list of low-profit and unprofitable enterprises. However, calculations have shown that in 1983 as compared to 1982 wages to sovkhoz workers increased to a lesser degree than did labor productivity.

The use of mark-ups must bring about important changes in the structure for financing agriculture. An analysis of this structure made in some sovkhozes showed that already in 1983 the significance of enterprises' own capital increased but that the utilization of capital obtained from mark-ups still does not correspond to its specific designation. Thus, in Yamskoy Sovkhoz of Domodedovskiy Rayon a total of 857,600 rubles were obtained additionally from the sale of products to the state. However, 70 percent of this total went to Gosbank in the form of loan repayments, into the reserve fund and into making various payments, i.e. this amount was almost excluded from economic turnover. The remainder was utilized to replenish enterprises' own turnover capital, for the material stimulation of labor and also for social needs. Here, however, the volume of receipts of monetary resources from the state budget decreased from 1,141,000 rubles in 1982 to 479,000 rubles in 1983. We can expect that already in 1984-1985 the sovkhoz will have at its disposal a free minimum of resources to carry out measures related to strengthening the economy and raising production effectiveness.

On the whole, for low-profit and unprofitable enterprises in Moscow Oblast the effect of utilizing mark-ups is indisputable. These enterprises received over 70 percent of their profits from mark-ups and used them to form funds of economic and material stimulation, which practically did not exist in the majority of enterprises. Correspondingly, the share of mark-ups in profits from the sale of products to the state was high in these sovkhozes--13.3 percent.

There has not been much practical experience related to mark-ups of procurement prices for low-profit and unprofitable enterprises. At the same time, this practical experience involves a number of important questions of management--price differentiation, providing incentives for economically-weak enterprises and making changes in crediting and financing. For this reason, great scientific-research work, the result of which will be the evaluation of this economic phenomenon, must be carried out. However, the existing data already now enables us to judge that mark-ups accelerate the development of weak enterprises and provide the opportunity to make a transition to single procurement prices for large zones.

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## Factor in Stimulating Production

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[Article by O. Yastrebova, candidate of economic sciences (MGU [Moscow State University]): "Procurement Prices and Stimulating Production"]

[Text] Within the complex of measures to implement the Food Program an important place is occupied by improvements in procurement prices and achieving cost-accounting conditions for the reproduction of kolkhozes and sovkhoses. With this goal in mind procurement prices were raised by decision of the May 1982 Plenum of the CPSU Central Committee. In scale this increase exceeds price increases for the entire period after 1965.

The scale of increases in procurement prices is one of the factors that determines the effectiveness of their stimulating influence. However, a specific mechanism for utilizing allocated resources is no less important. In this plan it is important in principle that price increases be carried out by means of two channels. For the first time in the practice of price stimulation of agricultural production price mark-ups have been introduced for low-profit and unprofitable enterprises totalling 9.8 billion rubles. The allocation of supplementary resources directly to economically-weak enterprises plays an important role in equalizing conditions for the development of agricultural enterprises. The use of allocated resources just for generally increasing procurement prices would not have facilitated a solution to this problem since, as practice has shown, economically-strong enterprises are the winners when prices are raised.

Price increases for products from low-income branches in particular have been directed at equalizing management conditions since the lags of many enterprises are related to their branch structure. Sixty one and a half percent of all allotments for increasing procurement prices and 83.7 percent of the resources allocated for mark-ups of procurement prices are directed into live-stock raising. As a result, there has been a considerable increase in the level of profitability of livestock production--an average of 20 percent. In 1983 the profitability level for milk was 20 percent, cattle--19 percent, hogs--24 percent and sheep and goats--25 percent. Livestock production output became profitable in its main production regions and in most union republics.

In economically-weak enterprises mark-ups can comprise up to 75 percent of basic procurement prices. This is a weighty increase that allows low-profit and unprofitable enterprises to increase their income. At the All-Union Economic Conference on Problems of the Agro-Industrial Complex the necessity to effectively utilize mark-ups was noted. A practical solution to this problem presupposes a thorough analysis of the economic nature of mark-ups.

This is not the first time that mark-ups of procurement prices have been introduced as an element in a system to stimulate agricultural production. For this reason, their introduction for low-profit and unprofitable enterprises should be examined as a new version of a widely-used economic factor.

In order to solve the problem concerning the nature of mark-ups of procurement prices for economically-weak enterprises it is important to make an analysis of their relationship to the mark-ups that were in use previously.

Stimulation of accelerated production growth was carried out with the aid of two types of mark-ups--for overfulfillment of plans and for growth in agricultural production above a certain level. Stimulation by means of changing prices in connection with the overfulfillment of plans was utilized for various products in 1933-1958 and 1965-1981. Mark-ups for production growth above the level for the previous 3 years were utilized for sunflowers, flax and raw cotton during the Eighth Five-Year Plan. Since 1981 for all the most important branches a 50-percent mark-up for the sale of products above levels existing during the 10th Five-Year Plan has been in effect. Thus, practical experience attests to continuity in the development of forms of mark-ups.

Mark-ups are a special variation on prices, although in their different forms the tie to basic procurement prices is manifested differently. This is why an identification of their economic essence is integrally related to an analogous analysis of procurement prices. The solution to this problem is directly related to the effectiveness of procurement prices.

The main function of the procurement price is the planning account function, which enables enterprises to implement expanded reproduction basically by means of their own resources. The fulfillment of this function determines the degree to which the function of stimulation by means of sales price is effective. The more complete the accounts function, the greater the stimulating effect of procurement prices. In turn, the implementation of functions inherent in prices is effected only when the price corresponds to its objective foundation, as reflected in publicly-essential labor expenditures. This is what achieves the great effectiveness of procurement prices and mark-ups.

However, the recognition of cost as an objective basis of price does not fully reveal its essence. The direct relationship between cost and labor expenditures for the production of a given type of product was appropriate only during the first historical stages of development of commodity production. In capitalism, cost emerges in transformed form as the cost of production. In a planned socialist economy there is a continued development of the process of cost modification. Here we find our own transformed forms which reflect the specifics of the reproductive process at different structural levels of the economy.

On the level of the enterprise, the basic cost-accounting link, publicly-essential expenditures are made up of the cost of agricultural production and profits, which are determined by normative profitability, which facilitates the development of production at a planned rate. Elucidating the economic nature of mark-ups from this point of view will enable us to more thoroughly analyze their stimulating role, to determine the effectiveness of various forms and to indicate the direction of further improvements in the utilization mechanism.

An analysis of various forms of mark-ups in historical terms shows that they often compensated for shortcomings in the system of procurement prices. When

prices for agricultural products did not correspond to the level of publicly-essential expenditures, production development in state enterprises was implemented by means of budgetary grants. In the kolkhoz sector the replacement of expenditures and replenishment of savings funds was implemented by means of low wages and poor development in the social-consumer sphere for a long period of time. Here a large role was played by credits as well as by a hidden form of subsidies--the writing off of debts to Gosbank. All of this attests to the fact that mark-ups fulfilled not only the function of providing incentives but also that of replenishing publicly-essential production expenditures.

Here price mark-ups for livestock products established in 1954 and then in 1965-1970 are representative. Although in form the given source of stimulation emerged in the form of mark-ups, its economic nature is identical to the nature of the basic procurement price since even the price with consideration of the mark-up did not secure the necessary conditions for production development. In 1966-1969 the level of profitability in livestock production, calculated with a consideration of mark-ups, equalled only 7 percent in the country's kolkhozes. The establishment of mark-ups was based on assumptions about the coming decrease in the cost of livestock production, which however was not confirmed by practical experience. Naturally, soon mark-ups were included in the basic price. For the same reason, in 1981 during the transition from mark-ups for above-plan production to growth totals paid out on the average for overfulfillment of the plan, the latter was also included in the fixed price.

Thus, non-fulfillment by the procurement price of the accounts function decreased its stimulating role. Since even with price mark-ups production expenditures often were not reimbursed, the effectiveness of price stimulation was poor. However, this does not provide a basis for denying that the mechanism for making resources available in the form of mark-ups has a specific stimulating effect. The stimulating effect is manifest in the very principle of paying mark-ups for achieving certain economic results. Practical experience attests to the fact that in improving the given factor there was a search for criteria to determine the order of paying out mark-ups as well as for a normative level of basic price that would facilitate the development of production in enterprises that do not receive mark-ups.

In paying out mark-ups for above-plan production the plan is such a criteria. In a socialist economy the plan characterizes the place of the enterprise within the system of the public division of labor and reflects the interests of society in the production of the given type of product. This is why in principle, the use of the plan quota as the base level is a sufficiently objective basis for the mechanism of stimulation. Nevertheless, in practice with the absence of clear criteria for developing plans, the use of mark-ups gave rise in enterprises to a striving to decrease plan quotas, which had a negative effect on the quality and authority of this important economic factor.

In a similar way, the tying together of a stimulation system and the plan did not sufficiently facilitate an increase in the effectiveness of

resource utilization or a growth in production output. A multiplicity of plans arose. Moreover, experience showed that mark-ups for overfulfillment of plans were obtained primarily by economically-strong enterprises, which strengthened differentiation among enterprises with regard to their financial situation.

All of this required a reexamination of stimulation criteria. Since 1981 the average sales level for the 10th Five-Year Plan has been accepted as the base. Growth mark-ups stimulate the pace of production growth better without arousing a striving to decrease plan quotas. The volume of mark-ups reaches an average of 4 billion rubles annually whereas if they are established for above-plan production their volume equals 3-3.5 billion rubles. This attests to the great advantage to agricultural enterprises of using growth mark-ups. At the same time, the selection as a base of development indicators achieved by every individual enterprise places enterprises with different levels of use of their production potential on an unequal footing. Growth mark-ups are advantageous first and foremost to economically-weak enterprises, which fulfills the goal of equalizing the levels of economic development of agricultural enterprises. However, even highly profitable enterprises have many reserves for increasing the volume of saleable products and thus for obtaining additional profits by means of mark-ups.

At the same time, the given measures do not eliminate the contradictions that also characterize mark-ups for above-plan production. The larger monetary evaluation of a unit of production during a productive year does not always correspond to the real contribution of labor, since during unfavorable years great expenditures of labor and material are required for the production of a smaller product. The lack of correspondence between the monetary evaluation of production and real production expenditures decreases the stimulating ability of the given factor.

From this point of view, flexible prices, which exist in the practice of stimulating agricultural production, are of interest. The insufficiently-developed methodology for building them, a strict deviation norm with a low base-price level and other factors have made the utilization of such prices hardly effective. However, the principle of establishing a relationship between price and real production expenditures deserves attention since a price built in this manner reflects publicly-essential expenditures to a large degree and consequently has more of a stimulating action.

Among procurement-price mark-ups a special place is occupied by mark-ups for production quality. They fulfill not only a stimulating function. This is a special, more complex form of reimbursing publicly-essential labor expenditures in price.

An essential condition for transforming the product of labor into commodities is their social usefulness, i.e. a certain consumer cost. In the process of forming cost as a social property of commodities, a certain average quality per physical unit of product, which emerges as the bearer of cost, is established. A higher quality means a greater product usefulness. At the given level of development of production forces an improvement in quality requires, as a rule, greater labor expenditures. For this reason, the



establishment of increased prices for high-quality products meets the need of bringing these prices closer to publicly-essential labor expenditures. Thus, mark-ups for quality foresee an integral unity between the accounts and the stimulation functions.

The problem of increasing the stimulating role of procurement prices with regard to improving quality involves a more complete accounting and measurement of various consumer properties of products. Thus, prices for milk are differentiated depending on fat content, although the content of protein and carbohydrates is an important characteristic of the usefulness of the product. There are many other such examples.

A more complete implementation of the accounts function in prices is an essential, but not the only factor involved in increasing their stimulating role. It should be kept in mind that procurement price is an integral component of the management system. It is possible to have variants in which the influence of prices is offset by the stronger influence of other, including administrative, factors. A lack of coordination in the action of various factors decreases the stimulating role of procurement prices. Here, the effectiveness of the stimulating mechanism as a whole and consequently of procurement prices depends largely on the degree to which the specific characteristics of development of various branches are taken into account.

The degree to which mark-ups are utilized by enterprises and the level of increasing income resulting from additional profits are types of criteria for judging the foundation of forms of stimulation. Thus, despite an increase in current procurement price lists for grain, sunflowers and sugar beets and the introduction of various stimulating mark-ups, the average actual sales price for these products fluctuated considerably, and in the case of sunflowers, there has been a persistent tendency for the price to decrease during the last three five-year plans. This attests to the insufficient effectiveness of the mechanism of price stimulation in the aforementioned branches. In particular, above-plan and growth mark-ups exacerbated fluctuations in actual sales prices during years with different natural-climatic conditions.

In contrast to the previously-existing order, less strict criteria are used to pay mark-ups to low-profit and unprofitable enterprises. The new factor allows for fairly wide variations in volume of resources paid out as well as in conditions under which these payments are made. According to the confirmed proposal, mark-ups are paid out within the limits of allocations to republics, oblasts and rayons in sums differentiated by groups of enterprises and types of agricultural products depending on the level of productivity of enterprises and their natural-economic conditions. The introduction of such mark-ups is related to the existing differentiation of enterprises by financial results of production and to the growth in the number of low-profit and unprofitable enterprises.

To a significant degree the given process is related to the very practice of price formation. Procurement prices that are differentiated by zone, which were the key factor in eliminating differential rents and in equalizing management conditions for enterprises in the country's different zones, were

oriented toward average zonal expenditures. Thus, enterprises which found themselves in worse natural-economic conditions in a price zone also turned out to be in a less favorable financial condition. With the growth of production costs the level of procurement prices in many regions did not provide for reimbursing expenditures for expanded reproduction even in enterprises with average production conditions. With low total profitability in some branches the further strengthening of zonal differentiation of prices and the introduction of intra-zonal differentiation in many regions could not be the cardinal solutions to the problem of equalizing cost-accounting reproduction conditions.

According to the existing resolution, centralized price differentiation is implemented only in union republics as a whole. In connection with the variability in natural-climatic conditions in zones with specialized agricultural production, union republics use different criteria and forms of intra-zonal differentiation of procurement prices. Because of the poor coordination in implementing this, considerable and not always well-grounded differences developed in the degree of fractionalization of price zones within union republics. In some places economically-similar price conditions for the same types of products differed significantly. In connection with this, as of 1 January 1983 price differentiation was decreased. The establishment of mark-ups for low-profit and unprofitable enterprises also considerably curtailed intra-zonal price differentiation.

Principles for distributing mark-ups and criteria for considering natural-economic conditions and for uniting enterprises into groups were not centrally elaborated. The solution to this problem was assigned to local organs, which gave rise to a multiplicity of variants for establishing mark-ups in the country's regions.

The number of factors considered in evaluating natural-economic conditions in various regions is related to the general condition of evaluative work. In the Baltic states, Vladimir and Voronezh oblasts and other regions a comprehensive evaluation of conditions was carried out previously, which significantly eased the distribution of mark-ups and increased their objectivity. In the Lithuanian SSR when price groups were being formed, in addition to a comprehensive evaluation of production conditions, which determined the previous intra-zonal differentiation of prices, a consideration was also made of the volume and cost of gross production and of credit debts to the state. Intra-zonal price differentiation according to four groups of enterprises was replaced by differentiation of mark-ups for five groups. In Latvia there has been a redistribution of enterprises by zones according to indicators of accounts net income per hectare of intensively-utilized lands, corrected for the number of workers in fixed production. All enterprises with worse natural-economic conditions and low incomes were placed in the fourth price group and most of them were issued price mark-ups.

In Altay Kray, in addition to low-profit and unprofitable enterprises mark-ups were issued to kolkhozes and sovkhoses with large bank debts and to newly-organized enterprises. In Omsk Oblast in order to establish mark-ups work was carried out to evaluate soil quality, special climatic features, capital

and labor supplies and location site. After a consideration of these parameters normative expenditures were determined and enterprises were placed into a group according to the level of actual profitability. In Moscow Oblast prices were previously differentiated by four zones for milk and by three zones for potatoes. Since 1983 enterprises have been distributed into 10 groups to receive mark-ups. For each group a single percent mark-up has been established for milk, cattle and potatoes. The criteria for placing enterprises into groups included, in addition to production profitability, an economic evaluation of soil in points and capital-labor ratio.

Experience shows that mark-ups of procurement prices are a more flexible and effective factor in equalizing reproduction conditions as compared with zonal and intra-zonal price differentiation. This is achieved by means of a more significant total volume of resources allocated for mark-ups as well as of the possibility to increase total price levels in individual enterprises more than before by utilizing mark-ups. Thanks to their utilization it has been possible to significantly increase the income of lagging enterprises. Thus, in Moscow Oblast, where about 60 percent of enterprises received mark-ups, in 1983 the total level of production profitability reached 33 percent. The financial results of production have become considerably more equalized in enterprises. The number of unprofitable enterprises decreased to four, which comprises less than 1 percent of the oblast's kolkhozes and sovkhoses. As an analysis of the work of these enterprises showed, low financial results arose from shortcomings in their operations.

Another positive factor is that everywhere there has been an accounting and correction of data on objective natural-economic conditions of enterprises. In regions where previously an intra-zonal price differentiation was employed a broader circle of factors was taken into account when procurement-price mark-ups were introduced. The coefficient of differentiation among groups of enterprises increased. Mark-ups play an even greater role in regions where previously intra-zonal differentiation was not employed.

At the same time, the utilization of the actual profitability level as the main criteria for distributing mark-ups does not exclude the possibility that the expenditures of enterprises that developed as a result of non-assiduously carrying out production will be reimbursed. In a number of places total profitability after the introduction of mark-ups turned out to be even higher in such enterprises than in neighboring enterprises which did not receive mark-ups.

In determining the essence of mark-ups for low-profit and unprofitable enterprises the basis should also be the degree of correspondence between prices and publicly-essential labor expenditures. This in turn assumes that there will be an elucidation of the reasons for higher production expenditures and the low profitability of such enterprises. If higher expenditures result from objectively worse production conditions within the framework of the region or zone, then the reimbursement of publicly-essential expenditures is achieved with the help of mark-ups. In such cases the price plus the mark-up fulfill a planning-accounts function and compensate for the shortcomings in the existing system of zonal differentiation of procurement prices.

In addition to this, low profitability and lags in level of development in enterprises are often based on poor production organization and poor work. Nevertheless, regardless of the reasons for lags, supplementary expenditures on the part of the state are required in order to strengthen the economies of such enterprises in individual cases.

Providing additional resources in the form of mark-ups for products produced corresponds to the principles of cost accounting to a greater degree than does the practice of free budgetary grants. Thus, in cases when existing large expenditures in enterprises are not publicly-essential and additional resources are needed for further development according to the plan, procurement-price mark-ups should be viewed as a special form of subsidies.

To make sure that in this case mark-ups do not become a bonus for mismanagement, strict controls should be established over the use of supplementary resources so that they are utilized for the needs of production development.

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PROFIT DISTRIBUTION IN INTERFARM ECONOMIC RELATIONS EXAMINED

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[Article by I. Zayets, administrative director of the Central Directorate on Questions of the APK [Agro-Industrial Complex] (USSR MSKh [Ministry of Agriculture]) and by V. Goremykin, candidate of economic sciences and sector director (VNIESKh [All-Union Scientific Research Institute on the Economics of Agriculture]): "Economic Relations in Interfarm Formations Under Conditions of RAPO [Rayon Agro-Industrial Association] Operations"]

[Text] The new forms of production created in accordance with the resolution of the CPSU Central Committee, "On the Continued Development of Specialization and Concentration in Agricultural Production on the Basis of Inter-Enterprise Cooperation and Agro-Industrial Integration,"--interfarm enterprises, enterprises that fulfill their functions, branch and territorial-branch associations--facilitate a more efficient utilization of labor, material and financial resources and have a considerable and ever-growing influence on the effectiveness of livestock raising in all enterprises participating in cooperation. According to data for early 1984, in the country there were 3,804 inter-enterprise formations producing livestock products in operation, including 1,370 interfarm enterprises, 2,277 kolkhozes and sovkhoses carrying out their production functions and 216 production associations. In 1983 they produced 17 percent of the meat produced in the country's public sector, raised 35 percent of heifers and primipara cows and received over 1 billion rubles in profits.

At the same time, inter-enterprise cooperation in agriculture is not utilized fully by far in a number of places.

End results of joint enterprises and associations depend not only on the organization of production and technology and on the level of mechanization of processes but also on the fulfillment of joint obligations by partners and materially-interested enterprises related to the development and increased effectiveness of cooperative production.

Inter-enterprise cooperation cannot be examined separate from other important directions in the development of livestock raising, and in particular from the intensification of all its branches, from the introduction of scientifically-based agricultural systems relative to different natural-economic zones in the country and from improving the economic mechanism of management on all levels of administration of the agro-industrial complex.

We can say conclusively that favorable conditions are being created in the RAPO not only for continued development of processes of cooperation and joint production but also for a more complete realization of potential effectiveness inherent in these processes. The model resolution on the rayon agro-industrial association gives more independence to RAPO councils regarding developing plan drafts on the sale of agricultural products by kolkhozes, sovkhoses and other enterprises and regarding improvements in the mechanism of economic relations between inter-enterprise organizations and enterprises participating in cooperation. Unified planning and management within the framework of the RAPO provided the opportunity to purposefully implement not only individual simple operations but also the reproduction and raising of the entire herd of cows, including the reproduction of the basic herd; to more rapidly and more thoroughly specialize kolkhozes and sovkhoses by widely utilizing the advantages of complex cooperation; and to eliminate interdepartmental lack of coordination and to significantly increase the effectiveness of end production output.

There will undoubtedly be special features to economic relations between participants in cooperation in each specific case, but at the same time common, general principles and approaches exist.

The specifics of cost-accounting relations between interfarm enterprises producing livestock products and participating enterprises are determined basically by the fact that the former are created on a per-unit basis and, being independent in organizational-legal terms, are the common property of participants in cooperation in accordance with their cooperative share. The products produced and profits are considered common property.

Economic relations between participating enterprises and interfarm enterprises presupposes a determination of the size of shared participation of kolkhozes, sovkhoses and other enterprises and organizations in forming property and resources for the joint enterprise; establishing means for evaluating products, materials, raw materials provided and jobs and services rendered during cooperation; the order and conditions for selling and distributing commodities that count towards the fulfillment of plans of participating enterprises; the formation and use of financial resources as a result of joint activities; the development and use of funds for economic stimulation of interfarm enterprises and the distribution of profits between participating enterprises. These relations are determined by a system of contractual agreements and established responsibilities for carrying them out.

The resources of the interfarm enterprise are formed from the shared dues of participating enterprises, deductions from profits obtained by interfarm enterprises, amortization deductions, Gosbank credits for capital investments and for replenishing turnover capital as well as from other sources.

The nature and degree of development of cost-accounting relations between interfarm enterprises and participants in cooperation depends to a large degree on the accepted order of planning production and of the sale of products to the state. In accordance with the resolution of the USSR Council of Ministers, "On Confirming the General Resolution About Interfarm Enterprises (Organiza-

tions) in Agriculture," plans on state procurement of products produced according to the principle of cooperation are transmitted to kolkhozes and sovkhoses that are included in the integrated formation, and interfarm enterprises receive only the plan on growth of live weight. Only in some individual cases, if during the production process interfarm enterprises do not have technological ties with participating enterprises, state procurement plans for products produced can be established with the consent of the aforementioned enterprises.

This type of planning system inspires participants in cooperation to increase the reproduction of young animals and to deliver them for raising and fattening in a more well-paced manner, which is one of the main conditions for effective work of interfarm formations. It is as if kolkhozes and sovkhoses commission interfarm enterprises to raise or fatten young animals that belong to them. The interfarm enterprise fattens livestock and sells it to the state, with credit for plan fulfillment going to enterprises which delivered livestock for fattening, and heifers are returned to participants in cooperation. The operation of the interfarm enterprise offers analogous production services. With production cooperation, the only owner of a product that is created in the final link of an interrelated technological chain is the reproduction enterprise, to which the product is credited at the conclusion of the production cycle.

Moreover, with the established order for transmitting procurement plans, the category of owners of the growth of a product obtained in interfarm formations includes those enterprises which produce and supply feed for the final stages of production while not themselves being involved directly in raising young. Thus, in Livenskiy Interfarm Enterprise for Final Cattle Feeding, Orlov Oblast, and in other regions of the country the achieved growth in live weight is distributed in proportion to the quantity of young and amount of feed delivered. Nevertheless, in some oblasts and republics state plans for the sale of products are often transmitted to interfarm formations in violation of the general resolution on the interfarm enterprise in agriculture and of existing law. For example, in Vologda and Lipetsk oblasts and Krasnoyarsk Kray, rayon agro-industrial associations establish plans on the sale of livestock products not for participants in cooperation but directly for interfarm formations, although they are closely linked technologically to participants in cooperation. As a rule, this worsens production results and leads to an uneven delivery of young animals from cooperating participants and to a significant underutilization of production capacities.

Products produced on an inter-enterprise basis are distributed differentially at a meeting of authorized representatives of cooperating enterprises, depending on existing production ties relating to deliveries of young animals and feeds and on other production conditions. In practice three basic principles are used for distributing growth in live weight of livestock; these have a significant effect on the economic relations between cooperating parties.

In interfarm enterprises producing poultry meat or pork in a closed cycle, when cooperative ties involve only feed delivery commodity products are distributed everywhere in proportion to the amount of feed provided by enter-

prises translated into feed or feed-protein units. If interfarm formations raise and fatten animals primarily with feed they have produced themselves and if calves are supplied by participants in cooperation, the distribution of sold growth of live weight in animals among partners is implemented in most regions of the country in proportion to the number of feed-days the animals are maintained in the interfarm complex. In connection with the fact that the young that is delivered to interfarm enterprises differs in breed and preparation for fattening or that heifers differ in age, live weight and nutritional status, in practice coefficients are utilized that take these differences into consideration.

If cooperative ties are implemented with the simultaneous delivery of young animals and feed, commodity products are distributed among enterprises according to the quantity of actual feed-days of maintenance of animals for raising and fattening, to which is added the volume of feeds obtained translated into standard feed-days. Delivered feeds are translated into standard feed-days according to actual average daily growth in live weight of one head during the upkeep period in interfarm formations and feed expenditure per unit of weight gain of live mass.

An important direction in the development of economic relations between cooperating enterprises is mutual accounts for services rendered and for animals and feed delivered. Depending on natural and economic conditions in different regions of the country, the level of economic development of participating enterprises and other factors, different methods of mutual accounts are employed. A generalization of the experience of mutual relations between cooperating enterprises which have developed in the republics and economic regions of the USSR showed that the essence of the fundamental principles of mutual accounts for young livestock and feeds can be reduced to the following forms--according to accounting prices on the level of state procurement prices depending on weight and nutritional state of livestock (Moldavian SSR and Krasnodar Kray); according to average cost for raising young animals and for feeds existing in the zone of the cooperating enterprises (Tambov and a number of other oblasts of the RSFSR); and according to accounting prices with subsequent distribution of actual net income (in most of the country's regions).

The utilization of accounting prices on the level of state procurement prices for young animals delivered for raising and fattening at the age of 15-20 days results in the fact that reproduction enterprises do not reimburse their expenditures for the reproduction of young animals and lose interest in the development of cooperation in meat production. We know that the level of complexity of the production process and of material and labor expenditures for obtaining progeny during the initial period of raising young animals are considerably higher than during the final stage--fattening. An analysis showed that at the reproduction stage the cost of 1 quintal of growth in live weight is somewhat higher in livestock and hog raising than in fattening. Feed expenditures in terms of cost and expenditures for wages are also correspondingly higher. Since procurement prices for slaughter-ready livestock sold to the state take into account publicly-essential expenditures on the average for all technological stages of meat production, they constrict the interests of reproduction enterprises.



Similar results are achieved with the evaluation of young animals and feeds delivered to interfarm formations according to their average production costs in enterprises participating in cooperation. With these types of calculations, in addition to feed and animals net income created in the process of raising the animals is also transferred, which violates the principle of equivalency of exchange and does not achieve a full consideration of cost-accounting interests of all cooperative members. This is why the General Resolution on the Interfarm Enterprise in Agriculture has determined that relations between participating enterprises and interfarm enterprises can be regulated by means of accounting prices and of distributing the profits that belong to participants in cooperation.

The system of forming accounting prices for young animals and feed and the degree to which prices are justified have a considerable effect on the development of interest in cost accounting on the part of participants in cooperative production. In interfarm enterprises and associations accounting prices, established in accordance with recommendations of the USSR Ministry of Agriculture, are utilized for young animals according to different methods--according to the principle of providing equal profits per ruble of actual expenditures when raising young animals of different ages; with a consideration of equal distribution of a certain share of the profits for existing fixed and turnover capital in reproduction and fattening enterprises and the remainder--according to labor expenditures; on the basis of total accounting costs and average profitability in raising and fattening young animals in cooperative enterprises (see: "Resolutions, Instructions and Specifications on Questions Related to Interfarm Cooperation in Agriculture," Moscow, 1979, pp 85-127). In practice the first method of establishing accounting prices, which foresees an equal level of productivity to production expenditures at the stages of reproduction, raising and fattening of livestock, has been most widely utilized.

The accounting price depends on production expenditures per unit of live weight gain in animals in three or two groups of specialized enterprises, prices of livestock sold to the state and estimated profits.

But the plan-normative cost as the basis of accounting price does not always correctly reflect real management conditions. In regions with profitable livestock production output it is expedient to make a transition to the use of accounting prices, which take into consideration actual expenditures in most participating enterprises, and to distribute most profits by means of prices.

Estimated profits for inclusion in price is determined as the difference between the normative sum of profits from the sale of products that are produced on an interfarm basis and normative or actual expenditures over a period of 3-5 years to produce these products at all technological stages.

After dividing the sum of estimated profits by total normative expenditures for commodities, the size of profits on the average per ruble of normative expenditures is determined. Then this indicator is multiplied by total normative expenditures according to technological stages and total profits are established for inclusion in accounting price.

As we know, total expenditures for raising and fattening young animals are made up of expenditures from reproduction enterprises for producing progeny and maintaining it until the moment it is sold to the fattening enterprise and from expenditures of the latter for achieving weight gain.

An analysis showed that the cost of 1 quintal of live weight in calves at the age of 20 days in reproduction enterprises of, for example, Korelichskiy Rayon of Grodno Oblast, reaches 460 rubles if the cost of progeny is included. Thus expenditures for one calf with a live weight of 50 kilograms comprises 230 rubles. Livestock delivered to the meat combine has an average weight of 440 kilograms per head. Consequently, the fattening complex achieves 390 kilograms of live weight gain. The normative cost of 1 quintal of weight gain, established with a consideration of actual expenditures by Kolkhoz imeni Zheleznyakovich, is 145 rubles, expenditures per head of cattle in the fattening complex equal 565 rubles ( $3.9 \text{ quintals} \times 145 \text{ rubles}$ ), and total cost at the time of sale is 795 rubles. Profits from the sale of 1 quintal of beef (with 90 percent of livestock sold in a high nutritional state and a consideration of a 50 percent bonus) will reach 280 rubles, or per head--1,232 rubles. This means that the estimated profit on the sale of one calf to the state will equal 437 rubles ( $1,232 - 795$ ), or per ruble of expenditures--0.512 rubles, and that the profitability level for beef is 51.2 percent. Thus, profits in the reproduction enterprise per calf comprises 118 rubles, in the fattening enterprise--289 rubles, and per quintal of live weight--236 and 74.1 rubles respectively.

The accounting price for 1 quintal of live weight for calves sold at the age of 20 days includes the expenditures of reproduction enterprises and the necessary profits due per quintal of live weight, i.e.  $460 \text{ rubles} + 236 \text{ rubles} = 696 \text{ rubles}$ , or 6.96 rubles per kilogram of live weight.

This type of system of regulating economic relations strengthens the principle of cost accounting, stimulates the specialized and cooperating enterprise to decrease the cost of meat and on this basis to receive more profits, which remain in the enterprise, guarantees them the receipt of a certain amount of net income at a time that coincides with the time the calves are sold and enables them to realistically evaluate production results. However, in most cases mutual accounts are implemented according to prices that include only a part of actual profits obtained on the average for the last 2-3 years. Here the part of profits advanced in the estimated price is not singled out individually and is fully applied to the cost of the weight of calves and amount of feed delivered.

The accounting of profits from interfarm operations in participating enterprises is carried out in accordance with Instructive Letter Number 35 of the USSR Ministry of Agriculture of 31 May 1978, Number 269-1, "On the System for Reflecting Operations Involving Interfarm Cooperation in the Bookkeeping Accounts of Kolkhozes, Sovkhozes and Other Agricultural Enterprises." The enumerated sum of profits according to final annual accounts of participating enterprises is reflected in account debit 51 and account credit 68; profit charged to interfarm enterprises is in the accounts of participating enterprises for the year during which it was charged, regardless of the time the

resources are actually delivered. This type of method will enable us to discover the real effectiveness not only of individual technological stages of production but also of the entire branch functioning under conditions of interfarm cooperation.

The concluding stage of economic interrelations between specialized interfarm enterprises and participating enterprises involves the distribution of profits at the end of the year.

Profits obtained from joint operations, as foreseen in the "General Resolution on Interfarm Enterprises (Organizations) in Agriculture" and in accordance with the decisions of a meeting of authorized representatives of participating enterprises, are made available to interfarm enterprises for the purpose of repaying long-term loans and interest on loans from USSR Gosbank and USSR Stroybank [All-Union Bank for the Financing of Capital Investments], for creating development funds, for providing material incentives, for implementing socio-cultural measures and residential building as well as for covering losses from operating residential-communal enterprises and other expenditures related to the enterprise's operations and for payments into the budget. It is recommended that the rest of the profits be distributed among participating enterprises with a consideration of their proportional contributions and the number of livestock and amount of feed delivered.

In practice, the system established by directive organs for distributing profits from interfarm operations in livestock raising is implemented in different ways--in the form of a fixed percentage per degree of participation, in the form of cost of sold livestock, amount of weight gain on the hoof and amount of feed delivered and credited, in proportion to expenditures of labor, according to multi-factor models and so forth.

Thus, in Moldavia total profits received by the interfarm enterprise, with deductions into the fund for material incentives and socio-cultural measures at a rate of 5 percent, are distributed among participating enterprises in the following amounts: for dues--10 percent, cost of delivered feed--50 percent and cost of fattened livestock--40 percent. In Voroshilovgrad Oblast 25 percent of profits are distributed for delivered animals and 75 percent--for feed. In Volgograd Oblast profits from joint beef production are distributed in proportion to the weight of young animals sold and with a consideration of growth in weight on the hoof and of the amount of feed used.

But the method of percent distribution of profits according to sources for the formation of resources is subjective and does not take into account the real contribution of every collective in the development of an implemented total effect of integrated production output. The principle of equal profits for each ruble invested or equal profits per quintal of growth in live weight in livestock at various stages does not achieve equivalency in economic relations for participants in cooperation because they have different capital-output ratios and labor intensities and different rates of capital turnover.

In recent years in many regions of the country final distribution of profits from livestock production output on an interfarm basis has been implemented

in accordance with the recommendations of the USSR Ministry of Agriculture in proportion to the number of livestock and amount of feed delivered and evaluated according to normative cost and proportional contributions in connection with amortization deductions.

A question arises as to the rightfulness of equating resources of shared participation with the cost of animals and feeds delivered to interfarm enterprises and distribution of profits according to the received total. Wouldn't it be better to allocate a certain portion from profits and to distribute it in accordance with shared participation and to direct remaining resources into participating enterprises depending on the cost of delivered animals and feeds? It seems that the second way corresponds better to Point 18 of the "General Resolution on Interfarm Enterprises (Organizations) in Agriculture," because proportional contributions on the one hand and the cost of animals and feeds on the other participate differently in the production process.

What profit sums should be directed into shared participation? Considering that fixed capital of the interfarm enterprises created by means of dues from participants in cooperation is utilized over a period of many years and transmits its cost to products in parts, it is best to determine its sum based on the size of amortization deductions for jointly-created production resources in general outlays of the interfarm enterprise. However, in practice not only fixed capital but turnover capital as well are formed by means of shared participation. Profits directed into enterprises with a consideration of shared participation must be determined in accordance with the existing resolution by a higher organ of the interfarm enterprise--by a meeting of authorized representatives of cooperating enterprises with a consideration of the role they play in carrying out the production program.

It would be incorrect to confirm that the distribution of profits by means of shared participation is expedient only at the beginning stage of work of the interfarm enterprise. Depending on the degree of development of interfarm enterprises, the role of shared contributions as the most important source for developing financial resources does not weaken.

Positive experience in distributing profits with a consideration of shared contributions of enterprises participating in cooperation has been accumulated in the RSFSR. For example, of the 5,286,000 rubles of profits received in 1983 by Livenskoye Interfarm Enterprise of Orlov Oblast, 4,915,000 rubles were distributed among participating enterprises, including 147,400 rubles for the sum of shared participation at the beginning of the year and 4,767,600 rubles for growth in live weight credited to enterprises and established in proportion to the delivered livestock and feeds. Moreover, through accounting prices in the course of the year cooperating enterprises are transferred about 400,000 rubles of profits in the form of an advance. A meeting of authorized representatives of participating enterprises determined that profits are transferred to kolkhozes and sovkhoses with a consideration of shared contributions from fixed capital at a rate of 3 percent.

Interfarm enterprises of Voronezh Oblast pay out the profits subject to distribution among cooperating enterprises in the following manner: 10 per-

cent--for total shared contribution, 40 percent--for livestock delivered and 50 percent--for feed, translated into feed units. For enterprises which are not cooperative members but which participate in joint production, the amount of profits owed is decreased by 25 percent and is counted as a shared contribution. Mayak Interfarm Enterprise of Liskinskiy Rayon, Voronezh Oblast, alone in 1983 transferred 5.3 million rubles to participating enterprises, or 70.56 rubles per quintal of beef sold.

Contractual agreements on redistributing profits are strictly carried out by interfarm enterprises that raise and fatten calves in Krasnodar Kray. They annually transfer over 30 million rubles to cooperative members; moreover, up to 10 percent of profits are distributed for shared contributions by kolkhozes and sovkhoses participating in cooperation.

Depending on specific conditions in practice still another system is used for distributing profits in which preference is given to one element, as for example, feed. In this case the smaller portion of profits is transferred to cooperative enterprises for shared contributions and animals delivered, and the larger portion--for feeds. Thus, in interfarm enterprises specializing in pork production (in a closed cycle--reproduction, raising and fattening) in most cases profits are distributed among participants with a consideration of shared contributions and feed delivered.

However, not all interfarm enterprises take shared contributions into account when distributing profits. This does not facilitate the creation of approximately equal conditions for cooperating enterprises, which participate differently in the formation of the fixed and turnover capital of interfarm enterprises.

An analysis shows that at the contemporary stage, based on specific conditions and tasks, different proportions develop in profit distribution (see table).

In some cases (Estonian SSR, Turkmen SSR and Ukrainian SSR) the greater portion of profits is allocated into the accounts of cooperating members when the development of a material-technical base in existing interfarm enterprises is basically completed and when funds foreseen by the resolution have been efficiently developed. In other cases, especially when an interfarm enterprise first begins operating, a significant portion of profits is directed into priority needs. From the table we can see that 85-90 percent of profits, or almost the entire sum, are distributed among cooperating enterprises, with the exception of resources earmarked for the fund of material incentives, the fund of socio-cultural measures and for other purposes.

The creation of the RAPO has opened up new possibilities for improving the mechanism of economic interrelations between interfarm formations and cooperating enterprises.

RAPO councils establish accounting prices for livestock, feeds and other resources delivered from one group of enterprises to another with a consideration of the common interests of all partners and the sum total of existing conditions.



# Distribution of Profits in Interfarm Enterprises in 1983, %

	Directed into:					
	Development fund	Material-incentives fund	Fund for socio-cultural measures	Loan payments	Credited to cooperating enterprises	Distributed for other purposes
USSR	24.7	8.1	6.8	15.0	35.8	9.6
RSFSR	25.9	7.9	7.4	14.9	35.5	8.4
Ukrainian SSR	22.2	5.9	4.6	13.5	46.5	6.3
Belorussian SSR	27.8	9.0	9.0	9.4	39.2	5.6
Uzbek SSR	21.2	9.5	7.3	16.1	43.1	2.8
Kazakh SSR	14.3	15.5	9.5	4.8	14.3	41.8
Georgian SSR	40.4	7.0	6.1	7.9	24.6	14.0
Azerbaijan SSR	27.3	6.4	5.4	20.9	25.4	14.6
Lithuanian SSR	8.1	5.7	7.2	40.2	18.2	20.6
Moldavian SSR	26.7	12.2	8.8	18.9	17.8	15.6
Latvian SSR	40.6	12.5	9.4	6.2	15.6	15.7
Kirghiz SSR	22.6	11.3	9.6	2.6	39.1	14.8
Tajik SSR	29.0	13.0	9.0	6.0	36.0	7.0
Armenian SSR	44.0	12.0	8.0	--	36.0	--
Turkmen SSR	17.0	13.2	9.4	--	49.1	11.3
Estonian SSR	4.0	10.0	4.0	--	64.0	18.0

Many RAPO councils give considerable attention to the work of interfarm formations. Thus, the council of the Baranovichskoye RAPO of Brest Oblast, following a proposal by the meeting of authorized representatives of cooperating enterprises, established new increased accounting prices for calves delivered by them for raising and fattening to Mir Sovkhoz, which carries out these functions on the principle of interfarm cooperation. Now the accounting price has been increased by 5.1 rubles to 13 rubles per kilogram of live weight in calves at the age of 10-15 days.

Under new conditions the specialized enterprise has been supplied with calves in a well-paced manner, and participating enterprises receive supplementary monetary resources.

Thanks to a strengthening of the feed base and increased growth in live weight in animals, not only are great expenditures for acquiring calves fully repaid in the sovkhoz, but annual profits reach 3.5-4 million rubles annually as well. In 1983 profits from the sale of beef exceeded 5 million rubles. For each quintal of live weight gain in animals 540 feed units and 2.3 man-hours are expended, which is correspondingly less by a factor of 2 and 10 than average republic indicators. The cost of 1 quintal of live weight gain equalled 99.8 rubles, which was lower by a factor of 1.5 than the republic average. One sold animal yields about 500 rubles of profits. Every worker in the complex produces production worth 100,000 rubles.

During the time that the sovkhoz functioned under conditions of interfarm cooperation, beef production in the region increased by a factor of 1.9, labor

expenditures decreased by half and total profits increased by 4 million rubles annually.

By decision of the RAPO council significant improvements were made in economic interrelations between hog-fattening enterprises and Aleksandrovskoye Interfarm Enterprise of Voronezh Oblast. For each piglet with a live weight of 22 kilograms cooperating participants receive 115-117 rubles, with a consideration of all outlays. This sum totally covers expenditures for the upkeep of the main herd of hogs in enterprises. As a result, participation in cooperation has become economically-advantageous for kolkhozes. Interfarm enterprises give a great deal of attention to the quality of delivered piglets. The level of production profitability of hogs reaches 57 percent.

The creation and continued development of interfarm cooperation in meat production require a transition from end distribution of profits according to annual results to distribution of their planned volumes primarily with the aid of accounting prices. Their use will enable us to increase interest in cost accounting and the responsibility of every participant in integrated formations for fulfilling confirmed production tasks and for decreasing the negative effect of the gap between the resources invested by participating enterprises and the profits they receive from the joint enterprise.

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## FORESTRY AND TIMBER

## REFORESTATION, TIMBER MANAGEMENT PROBLEMS DISCUSSED

Moscow SEL'SKAYA ZHIZN' in Russian 29 Dec 84 p 2

[Article by Doctor of Agricultural Sciences D. Stolyarov, director of the Leningrad Scientific Research Institute of Forestry, and Candidate of Economic Sciences Ye. Polyanskiy, Leningrad Oblast: "According to a Program--for the Centuries"]

[Text] For Timber Management--Intensive Development

The contemporary development of public production has brought about the use of natural resources on such a scale that the effects are comparable to those of the centuries-old tectonic processes which alter the planet's appearance. This is true also of the use of timber. It is now being used on such a scale that the changes in the environment produced by it can no longer be compensated for by the natural processes of the restoration and formation of the timber growth. Felled areas are being enlarged, and there is a steady growth of tracts primarily with no importance as sources of raw materials and which are of secondary importance with respect to utilization of the timber. These are the so-called first group of forests--soil and field protection, water control, health and sanitation, recreational and other types. There is a clearly marked diminishing of the base for industrial timber procurement as a result, and the quality of the lumber is deteriorating.

The subject of improving the use of timber in the nation, restoring it and reproducing it at outstripping rates was raised at the October 1984 Plenum of the CPSU Central Committee. Comrade K.U. Chernenko underscored the following in his report at the Plenum: "Products Made From Timber are of Great Importance to the National Economy. We need to treat it as carefully as we do the land.... We should think this matter over thoroughly and perhaps, reassess certain attitudes." There are serious grounds for putting the matter this way. At the present time, there is not enough organization and no unified approach to timber management in the work of various departments and those in charge of them, proper attention is not being given to the development of procurement and reforestation capacities, to the overall mechanization of the work, the construction of roads or improvement of the settlements.

The forestry scientists are also faced with some large tasks. It is essential, it is inevitable to begin the purposeful rebuilding of the timber tracts which

have been formed by the influence of natural factors and by human action aimed mainly at satisfying current needs. This process must involve altering the distribution of the forest, as well as the species and age structure, the structure of individual stands, productivity levels and so forth. This will make it possible to satisfy public needs more fully.

These projects should provide for the most effective, coordinated accomplishment of the diverse and in many ways, conflicting tasks: the creation of good conditions for agricultural production and for providing the necessary lumber procurement volumes and sufficiently stable reforestation, possibilities for the population to vacation in the country and for achieving the necessary level of comfort in the microclimate, and so forth.

The idea of "programming" forests is actually not a new one. It was the basis of the so-called period forest development method worked out back in the last century. The Great Anadol'skiy Timber Tract, a prominent memorial to our national forestry begun at the middle of the last century, can be regarded as an example of it's realization in our nation. We also have other forests established in the difficult condition of the steppe and semi-arid regions in later years, including some established during the Soviet period.

Today, we must develop forests which conform most fully to the society's economic and social needs, while at the same time continuing to be an organic element in the environment and retaining their capacity to regulate themselves. This must be done within periods of time acceptable with respect to the economic possibility and the tasks involved in the development of this or that region. The goal and the substance of the process of intensifying timber management, the great need for which is now apparent, lay precisely in this.

We have ways to begin accomplishing this. For example, the Leningrad Scientific Research Institute of Forestry is developing plantation-type timber production methods as the most promising management system for forests of the future. The entire operation, from seed production to timber procurement, will be performed as part of a single process in those forests. New stands of trees are being planted in Gorkiy and Kostroma oblast, in Belorussia and in the Ukraine under the scientific and methodological supervision of the Leningrad Scientific Research Institute of Forestry. The institute is coordinating the specific areas of work involved in developing practical timber utilization systems. Also involved are the Timber Technology Academy imeni S.M. Kirov, Leningrad State University, the Soyuzgiproleskhoz and Giprolestrans institutes, and the Silava Scientific Production Association in Latvia, the Ukrainian and Belorussian forestry institutes and a number of other scientific research and planning organizations are participating. It has become clear that the problem is very complex and multifaceted. This is a result of both the historical pattern of timber utilization in our nation and the contemporary state of timber management.

The Soviet Union is rich in forests, and until recently there was no immediate need for extensive conversion to the intensive management systems on them. The concept of "programmed" forests is therefore presently being worked out on the scientific level. We have still not begun applying it in the general production practices, although this is now necessary, especially in areas of the European and Ural zone. Large All-Union lumber industry complexes have been

set up there and are continuing to be developed, the production capabilities of the lumber processing enterprises are not being used at full capacity, and the economic indices are deteriorating.

We can not begin resolving this problem earnestly and thoroughly without significantly restructuring the system of reforestation, lumber procurement, initial and final processing of the lumber. A number of central elements can be identified in this difficult unavoidable task.

First of all, we need to concentrate most, and then all of the lumber procurement and processing at enterprises of the specialized ministry. We also have to alter the technical and investment policy in the timber and lumber processing industry in order to achieve the fullest possible, waste-free use of lumber supplies and timber designated for felling. This pertains also to the prudent use of timber reserves, which are even now adequate to meet normal, planned lumber needs. We must then convert to nonsubsidized enterprises organically linked together in the integrated technological process of producing timber and procuring lumber. Finally, the reforestation must be organized efficiently, in a way which will meet future needs. This must be based on the planning and "programming" of forests for the different regions of the nation.

It would be impossible to turn all of the nation's forests into "programmed" forests all at once, of course. This would not even be expedient. We must divide the territory up into zones based on the degree of immediacy and urgency of developing such forests, basing this on economic and social development needs and interests, as well as the specific features of the natural and commercial systems and the natural territorial complexes. At the present time, there is no other way to turn the existing forests into forests of the future.

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## FORESTRY AND TIMBER

### NEW SERVICE BENEFITS FOR TIMBER WORKERS SET FORTH

Moscow LESNAYA PROMYSHLENNOST' in Russian 6 Dec 84 p 3

[Article by V. I. Letyagin, deputy chairman of USSR Gosleskhoz [State Committee on the Timber Industry]: "Rewards for Length of Service"]

[Text] The party and government exhibit untiring concern regarding improving labor and living conditions for timber workers. A clear confirmation of this is the acceptance of supplementary measures to consolidate cadres in the branch.

The editors have asked V. I. Letyagin, deputy chairman of USSR Gosleskhoz, to describe the new benefits for timber workers.

A one-time bonus is paid for length of service to workers, directors, engineering-technical workers and employees of enterprises and production associations of the timber industry, as well as of forestry industry enterprises and forestry industry production associations with a volume of exported wood of over 60,000 cubic meters (in mountainous regions--over 50,000 cubic meters) annually and located in heavily-forested regions of the country as well as in Mari ASSR, Udmurt ASSR and Gorkiy, Kalinin, Kurgan, Leningrad, Moscow, Novgorod, Novosibirsk, Omsk, Pskov, Chelyabinsk and Yaroslavl oblasts.

Let me remind you that the following regions are included among the heavily-forested: Arkhangelsk, Vologda, Murmansk, Perm, Sverdlovsk, Tyumen, Kemerovo, Magadan, Irkutsk, Chita, Amur, Sakhalin, Kamchatka, Tomsk, Kostroma, Kirov and East Kazakhstan oblasts, Altay, Krasnoyarsk, Khabarovsk and Maritime krays and the Karelian, Komi, Tuva, Yakutsk, Buryat and Bashkir autonomous republics.

In some sparsely-forested regions of the country--the Mordovian ASSR, Tatar ASSR, Chuvash ASSR, Krasnodar Kray, Astrakhan, Bryansk, Vladimir, Volgograd, Ivanovo, Kaliningrad, Kaluga, Kuybyshev, Penza, Rostov, Ryazan, Saratov, Smolensk, Tambov, Tula and Ulyanovsk oblasts of the RSFSR, Volyn, Transcarpathian, Ivano-Frankovsk, Zhitomir, Kiev, Sumy, Chernigov, Lvov, Rovno and Chernovitsky oblasts of the Ukrainian SSR as well as the Belorussian SSR, Lithuanian SSR, Latvian SSR and Estonian SSR--length-of-service benefits are being introduced once again for workers, directors, engineering-technical workers and employees of enterprises and production associations of the timber industry as well as forestry industry enterprises and forestry production associations with analagous minimal volumes of wood delivery.

For forestry enterprises and production associations of all the aforementioned regions with smaller plan volumes of wood deliveries a one-time bonus will be paid only to workers of forestry points and shop sections whose plans for wood deliveries and timber felling for the purpose of forest maintenance and sanitation comprise over 10,000 cubic meters annually. The order for paying bonuses for length-of-service and the list of workers who have a right to receive such benefits will be determined by USSR Goskomtrud [State Labor Committee] and VTsSPS [All-Union Central Trade Union Council].

[Question] What will be the size of the one-time bonus for length-of-service?

[Answer] In heavily-forested areas as well as in the Mari ASSR, the Udmurt ASSR and Gorkiy, Kalinin, Kurgan, Leningrad, Moscow, Novgorod, Novosibirsk, Omsk, Pskov, Chelyabinsk and Yaroslavl oblasts benefits are paid out for continuous length-of-service, which gives the right to receive rewards in the following amounts (in percent of annual tax rates or official salary):

	For skilled workers, directors, engineering-technical workers and employees	For other workers
from 1 to 3 years	10	5
3-5 years	15	10
5-10 years	20	15
10-15 years	25	20
over 15 years	30	20

In sparsely-forested regions--for continuous length-of-service of  
 1-3 years--0.6 percent of monthly tax rate (official salary);  
 3-5 years--0.8;  
 5-10 years--1.0;  
 10-15 years--1.2;  
 over 15 years--1.5.

[Question] When will the benefits for length-of-service be introduced and what resources will be used to make the payments?

[Answer] The first payments of one-time rewards for length-of-service will be paid for 1984 in the first quarter of 1985.

Expenses related to the introduction of payments of one-time benefits will be covered by the wage fund. In connection with this, work must be carried out in every enterprise to find internal reserves for economizing in the wage fund by means of continued production concentration and specialization, by increasing the level of mechanization of work and by strengthening the regimen of economy.

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## LAND RECLAMATION AND WATER MANAGEMENT

### LAND RECLAMATION EQUIPMENT REQUIREMENTS REVIEWED

Moscow SEL'SKAYA ZHIZN' in Russian 6 Dec 84 p 2

/Article by P. Polad-Zade, 1st deputy minister of USSR Ministry of Land Reclamation and Water Resources: "At a New Stage From the Standpoint of quality"/

/Text/ It is difficult to exaggerate the importance of land reclamation with regard to raising the stability of agricultural production and achieving dynamic development of the national economy. This point was emphasized in a very convincing manner during the October (1984) Plenum of the CPSU Central Committee. Today the output volume of field crop husbandry products being obtained from irrigated and drained lands amounts to more than one third of all farming output. And indeed the reclaimed tracts of land occupy 33 million hectares.

Still, there is no basis for complacency. By no means is full use being made of the potential embodied in a reclaimed hectare of land. Many reserves are available for expanding the scales of aquicultural construction and improving the quality and operational reliability of reclamation systems and installations. The party has advanced the task of raising land reclamation to a qualitatively new level and scientific-technical progress must play a decisive role in carrying out this work.

Throughout the country, scientific developments are successfully being introduced into land reclamation production operations. Much has been achieved in the area of improving the sprinkling machines and the designs for closed irrigation and drainage systems. However, large areas are still being watered using low productivity machines and involving large expenditures of manual labor. Thus, a great amount of work remains to be carried out in this regard.

Considerable progress has been realized over the past decade in introducing broad-swath sprinkling equipment into operations. The Fregat, Volzhanka and Dnepr machines are enjoying great popularity among the workers. The production of the new and highly productive Kuban' and Kolomenka-100 machines has been mastered. True, not every new development is being accepted immediately. Time is required in order to break them in properly. Thus, a new modification of the Kuban' sprinkling unit was created following extensive testing; it has high operational qualities and is both reliable and economical of use.

It is gratifying to note that our scientists and designers have a clear understanding of the path to be followed for achieving further improvements in the irrigation equipment. Fine developments have surfaced in the case of synchronous-impulse systems, which are known as KSID's, strip hose sprinklers and mobile units for the watering of small farm crop rotation plots. They have already undergone training ground testing at the Raduga All-Union Scientific-Production Association and today they are being introduced into operations at sovkhozes in the Golodnaya and Sherabadskaya steppe regions. Work is going forward in connection with the creation of highly productive broad-swath machines with frontal movement, using water obtained from closed water supply lines. A complex of highly effective equipment is being created for the mechanization and automation of surface watering, equipment for irrigating tracts having broken relief and equipment for applying mineral and organic fertilizers, microelements and pesticides together with water and also for the utilization of waste water.

It is obvious that the creation of new sprinkling equipment represents only one aspect of the overall goal of scientific-technical progress with respect to land reclamation. The USSR Minvodkhoz /Ministry of Land Reclamation and Water Resources/ is directing the scientific and design bureau collectives to employ a comprehensive approach in solving the main problem -- raising the efficiency of the land reclamation systems. Much is being done to improve the power-pump equipment and to ensure the introduction of shut-off regulating hardware and the conversion over to the use of unit-boxes and complete units instead of building pumping stations.

Complete unit pumping stations (BKNS) have already been "included" in a number of irrigation systems. Extensive production testing is being carried out on immersible capsule pumps, the use of which will generally make it possible to eliminate the construction of costly pumping station buildings. This promises to produce a considerable economic effect, since we have in mind not just individual units but in fact hundreds of such buildings.

Nor can polymers be ignored. This offspring of chemistry is providing land reclamation with great opportunities. The use of plastic corrugated pipe instead of the traditional ceramic pipe is making it possible to lower sharply the labor-intensiveness involved in the construction of closed drainage. In such instances, it is not necessary to use an excavator for digging a trench. Drainage is being provided using the non-trench method. As a result and depending upon the soil, productivity is being raised by several times, heavy manual labor is eliminated entirely and improvements are being realized in the quality of the construction and in the reliability of the drainage.

High results are being realized from the use of polymer pressure pipe for creating irrigation systems and water supply lines. The further introduction of trickle, finely dispersed, subsoil and other progressive types of irrigation, which make it possible to economize considerably in the use of water resources, would be unthinkable in the absence of polymers. By the end of the next five-year plan, practically all drainage will be created using plastic pipe. The general introduction of polymers will facilitate labor considerably and this will make it possible to utilize up to 100,000 individuals in other sectors of aquicultural construction and to realize annual savings amounting to 50,000 tons of metal and large amounts of fuel and energy.



Modern land reclamation systems constitute a complicated technical complex of unique pumping stations, numerous hydraulic engineering installations and sprinkling units. Naturally, it is difficult to control this equipment in the absence of automatic equipment. Moreover, a requirement exists not just simply for a set of various types of automatic equipment, but rather for the complete automation of the entire water distribution and watering process. Here substantial assistance can be provided by microprocessor equipment, which controls the technological processes on the basis of agrometeorological parameters, that is, in strict conformity with the requirements of the plants.

The introduction of automatic equipment raises the labor productivity of operational workers by one third, it reduces the number of service personnel considerably and it results in a 30-40 percent savings in the use of irrigation water. Here is a specific example. In Saratov Oblast, 50 pumping stations were converted over to automatic control, thus making 100 skilled workers available for other work. The automatic equipment exercised control over 12,000 hectares.

Domestic land reclamation operations have reached such a level that it has become increasingly more difficult to collect information using the usual methods. In particular, aerospace methods of remotely controlled sounding are being employed successfully for obtaining operational information on soil moisture content, its salinity, the condition of large canals and reservoirs and on the depth of ground water tables. The data being obtained in this manner is making it possible to control the water-salt regime of soil, to plan the servicing and repair of irrigation and drainage systems in a timely manner and to shorten the research periods required for aquicultural construction.

In the interest of controlling an irrigated field and obtaining a maximum return from a reclaimed hectare, more and more use is being made of yield programming methods which involve the use of information systems and which, in conformity with agroclimatic data, indicate when and how much moisture should be made available to the plants. In the not too distant future, such systems will coordinate the operational conditions and regimes of all services of the agroindustrial complex, upon which the yields are dependent. Such information systems are already available for covering approximately 500,000 hectares. This area will increase considerably in future years.

The achievements by land reclamation specialists in the area of scientific-technical progress are greatly dependent upon the contacts made with industry. The effectiveness of inter-departmental scientific-technical programs which are developed and implemented by several ministries is quite high. The initial such experience was accumulated during the creation of the Kuban' machine, the development of which involved the participation not only of Minvodkhoz but also scientific-design subunits of the Ministry of the Shipbuilding Industry. Collaboration resulted in the mastering of the series production of the Kuban' machine at a specialized plant built by land reclamation specialists in Krasnodar Kray.

The special-program method for introducing new innovations into operations is typical of collaboration with other ministries. For example, our ministry mastered the laser technology for levelling irrigated lands jointly with Minstroydormash /Ministry of Construction, Road and Municipal Machine Building/,



Minelektronprom /Ministry of the Electronics Industry/ and Minpribor /Ministry of Instrument Making, Automation Equipment, and Control Systems/. The development of powerful pumps, equipment for water purification and many other items of equipment is actively being carried out with Minkhimmash /Ministry of Chemical and Petroleum Machine Building/.

A key direction to be pursued for raising labor productivity and reducing the proportion of manual operations is the series development of a complex of machines and mechanisms for effective technologies to be used for operational, levelling and soil improvement work. Thus the creation of the multipurpose undercarriage using the K-701 tractor and its conversion over to caterpillar tread, with a highly maneuverable gear box, ensures around-the-clock work for the land reclamation specialists. Moreover, any operation can be carried out: laying of pipe and working of soil, gathering up rocks, plowing and digging of canals. The initial machine models, which successfully underwent testing, were created as a result of creative collaboration with various departments.

There can be no doubt but that this collaboration will be developed further. The land reclamation specialists are awaiting various items of equipment from the machine builders: powerful continuously operating equipment, rotary excavating complexes, suction dredges and scrapers with large volume buckets. The requirements for industrial tractors of the T-330 type and other highly productive mechanisms are increasing.

In land reclamation, just as in other branches of the national economy, technical progress is inseparably associated not only with scientific development but also with the production equipment and labor methods created on the basis of such technical progress. And here, certainly, a great deal depends upon ourselves and upon those who work directly at the aquicultural complexes and at the kolkhozes and sovkhozes. To create new high quality capabilities in a rapid manner and with reduced expenditures for construction and operation and to employ the techniques and equipment in an intelligent manner -- these then are the tasks which today have been assigned to the land reclamation specialists by the October Plenum of the CPSU Central Committee.

It is with a sense of gratitude for the concern being displayed by the party and government for further improving the well-being of the Soviet people that the country's land reclamation specialists are devoting a maximum amount of effort to ensuring that the renovated lands produce a generous return.

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